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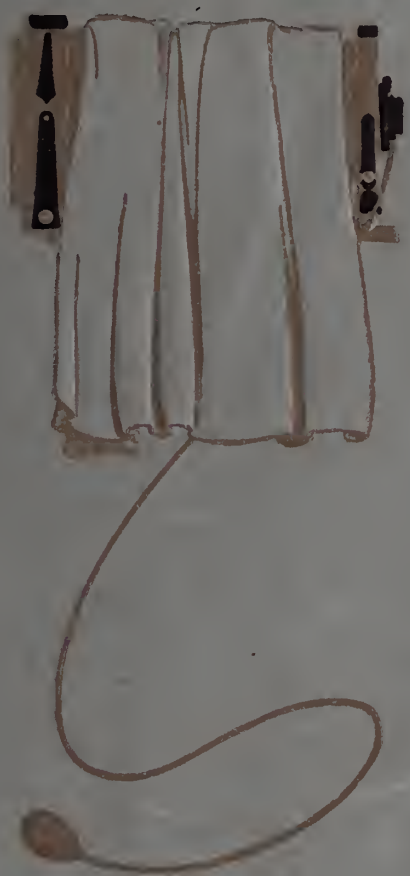

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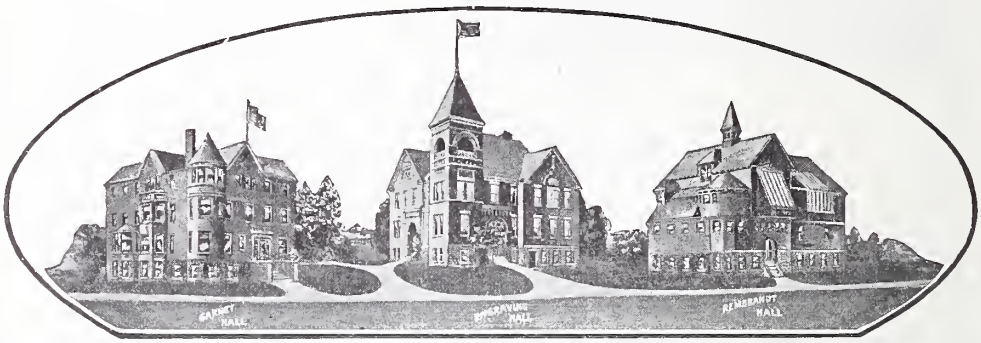

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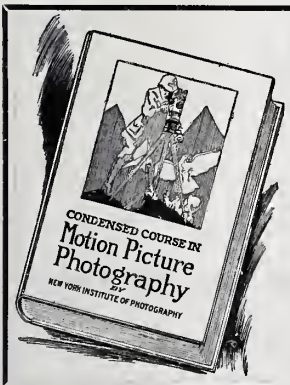

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CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG. SAN FRANCISCO CALIFORNIA

VOL. XXVII JUNE, 1920 No. 6

The Way To Learn Something

By J. Walter Doubleday

With Illustrations by the Author

You, gentle reader,—and isn't it fortunate that all readers are so gentle, are of course an exception; but we all know not a few amateurs, well out of the beginner class if length of experience counts, who are stumbling along without any clear ideas concerning the selection of stops, duration of exposure, suitability of plate or film, requirements as to developer, remedy for the shortcomings of their negatives, and the like. They have perhaps used every one of their several lens stops on hundreds of different subjects, they have given every kind of an exposure on the widest variety of subjects and under all conditions, and so on through the list, but little of real value has been learned. They have gone about it in the wrong way.

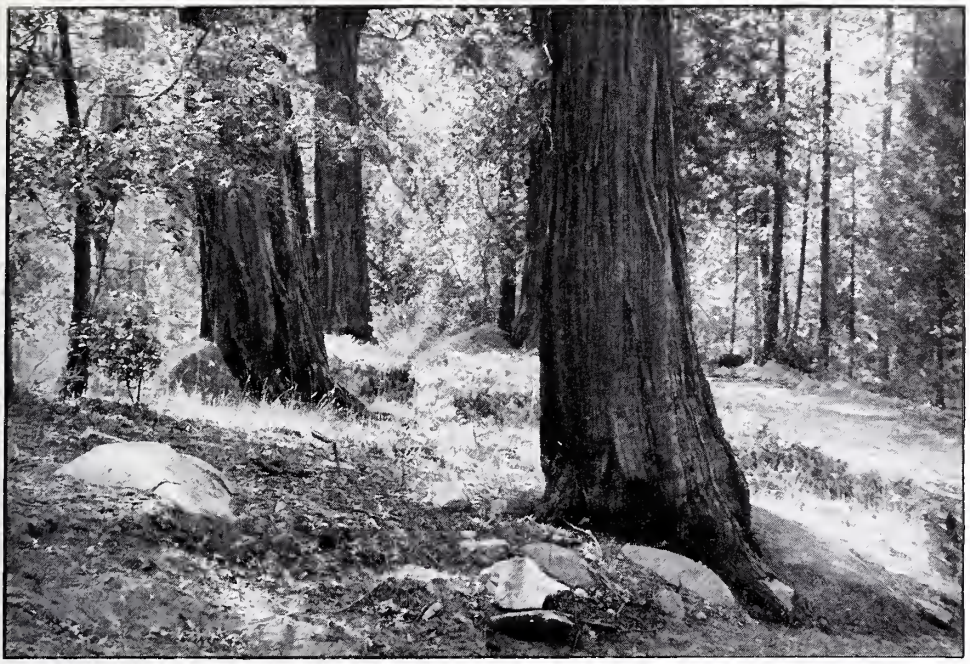
The proper way is to learn one thing at a time and learn that one thing fairly well. And we can only do that by so conducting our study that the result will be real knowledge. And as our desire to use our cameras involves experience therewith, we have a good teacher almost forced upon us, if we will only learn from her. Take the matter of the stop to use for this or that scene or subject, and let us see what can be done, employing for the purpose the very next exposure we are tempted into making, be it what it may. Let us suppose it is an ordinary landscape, which is all the better for the reason that we will be fairly certain about the exposure. We know that every size smaller in stop diameter means doubling the exposure, so attention is given to that point. Then we make a series of four or five exposures, varying the stop each time, observing that while the large stops are used the exposures are short enough

to permit of the camera being held in the hand, but the smaller one necessitates a tripod or other support. These exposures, developed and printed, will give us a basis upon which we can determine our course when a like subject is again presented. Of course, if our camera is a small one, the depth of field, that part of the view in good focus or apparently sharp, will be quite sufficient with a fairly large stop. The reason for this is; the depth of field depends upon the actual diameter of the stop, not upon its relationship to the other stops used with the lens. A stop that is half an inch in diameter may be the largest stop in our small lens and may have a working value of f-5.6, while on another lens, one of longer focus and covering a larger plate, it may be a medium-sized stop, say f-16, but on whichever lens it is used the depth of field will be the same; what will vary is the exposure time and the size of the image, although there is in this connection no relationship between size of image and exposure time.

If we study these four or five prints rather closely we will learn a few things further than that want of a tripod may necessitate a larger stop than we might otherwise see fit to use in order to get a desired amount of depth of field; and perhaps still further, that great depth of field is not always necessary. We will learn that as the stop is made smaller and the depth of field increased, the zone of sharp definition increases faster behind the point focused upon, the point sharpest with the largest stop, than it does in front of that point. We find that with our lens focused upon some point in the middle distance, decreasing the size of the stop carries the sharpness into the distance much faster than it brings it forward or into the foreground. Knowing this we can easily reason it out that if the foreground is wanted in sharp definition we can achieve that result with a larger stop if we will but shift our focus to a nearer point before stopping down. Doing this, the desired depth of field can be secured with a larger stop than would be the case were the focus set on a more distant point.

The next step will be to take a rather close-up subject and try the same procedure, the same series of exposures, starting with a large stop and working downward to one of the smaller ones. We will learn that the depth of field is much less with these near subjects and that it is necessary to focus more carefully, either with the focusing screen or the scale intended for the purpose. A good subject would be some obliging friend who would seat himself before the lens and occupy the time reading a favorite book or the daily paper. If there should be a background of shrubbery or even a wall, not too close, but just so the subject did not come in front of the unobstructed sky, so much the better. With a series of prints from these negatives, our study could be resumed. And, with each print marked as to the size of stop used, much could be learned; and what would be better, such information as our reading gave us would be of more value because understood more fully.

Convinced that we have gained some information concerning the why and wherefore of the various stops, let us proceed in the same way with the subject of exposure. In our last experiments we varied only the stops, the exposures being relatively the same, so in this series we will vary only the exposures.



THE FOREST GIANTS

TUMBLING WATERS

We select one stop and use that throughout, making a series of varying lengths of exposure on two or three different classes of subjects, preferably subjects of the kind that give us the most trouble generally when it comes to determine the proper timing; any kind of an interior, a portrait in the shade, and perhaps a rather dark and heavy landscape. This will give us three series of negatives, each ranging from decided under-exposure to more than enough for best results. From these we should be able to learn more about the proper time to give subjects of like character than we could learn from years of indiscriminate guessing at the proper exposure. True, we are apparently wasting not a little perfectly good film or plates, but waste at this point will mean saving much more material in the future, besides saving disappointment attending mistakes that cannot be remedied.

And so we should proceed with our various efforts. We will find our photography taking on a new interest, the interest that always accompanies a feeling that results are being achieved. Suppose we wish to determine the suitability of a slower plate or film for our work. Nothing can be more conclusive than to expose three or four of them upon the same three or four subjects upon which we can immediately expose a like number of the plates or films with which we have been working. Of course, we increase the exposure for the slower emulsion in accordance with the instructions furnished by the dealer or manufacturer. We do the same when we desire to try a new brand of plates or film; and, doing this, we learn something really definite. All conditions are allowed to remain exactly the same, with the exception of the plates or film being tried. Too often the worker fails to make his experiments with any new material worthy of the name trial. He takes out some of the new plates and exposes them on all kinds of subjects; development proves that the proportion of unsatisfactory negatives is greater or smaller than usual, as the case may be, and the new plate is condemned or approved accordingly. In reality, nothing has been learned, his experience has gained him nothing; in fact, he has really denied himself an opportunity of learning something about the behavior of his regular brand of plates by changing to the new one.

We wish, perhaps, to learn something about reducing and intensifying. The usual procedure is to wait until confronted by a negative that refuses to give a good print, and then to turn to some formula in our favorite magazine, and give it a trial upon the negative in question. The result is almost sure to be a failure. The worker who is inexperienced in such manipulation is about as likely to succeed at the first attempt as would be an entirely inexperienced one trying to mix up a developer and develop his first plate. How much more sensible it would be for one to take a few of his waste negatives and devote an evening to putting them through the manipulation required by one particular formula, doing it often enough and with a varied enough collection of negatives to learn just how the solutions behaved under different conditions. He would learn just what kind of negatives were most amenable to the treatment, what kind were most susceptible of improvement, what resulted from slight changes in the strength of solutions or mode of application, and so on. The one process mastered, another like process could be tried with a much

IN THE PRIMEVAL FOREST

THE MOUNTAIN CASCADE

greater degree of satisfaction, for the simple reason that the original experiments had provided one with a basis upon which to form, through comparison, some judgment as to relative value of the results.

Instead of this plan of procedure, we thrash around from one process to another, learning little or nothing, condemning them all, and possibly the journals from which the formulas were secured. And here is where we can say a few words for our friends, the men who get out the photographic journals, those journals that are worth so much to us if we would but make use of them. Let us suppose that each issue contains but one hint, help, formula, or process that fits into our practice and we make it a point to work out and make our own that particular one thing each month. At the end of a year we would be in possession of definite working knowledge of twelve individual methods or processes, enough to assure us almost the rank of an expert. But instead of this, we read over our favorite journal each month and glean but little real practical knowledge from the information published therein. What could be more interesting than setting ourselves the task suggested above, if task it could be called. It would furnish a most interesting occupation; one strictly photographic, and one that we could vary according as our time was limited or otherwise, according to our other photographic interests at the moment, and even according to the condition of our purse if that were necessary.

The real trouble with so many of us is that we are not willing to learn by expending a little time and thought in study and in working out our own problems. We make a portrait, for example, and because it is unsatisfactory, we assume, not that we have failed to give the subject the proper study, but that we should have had a regular studio skylight and a portrait lens. It is, of course, possible to produce better portraits of a certain size and quality with a portrait lens used under a proper skylight, but with the matter of lighting and posing understood, one can make better portraits out of doors or in ordinary rooms, with the most inexpensive apparatus, than is turned out in many studios, as our professional home-portrait workers are proving every day. The same thing applies to landscape work. We ascribe our own failures to score a success to a lack of proper equipment or to an insufficiency of suitable subject material. If we only had a better camera and lens, if the surrounding country was more picturesque and pleasing, what wonders we might achieve. But look over some of the simple landscapes that are put forward as salon pictures and ask yourself if they are distinctive by reason of the scenic beauty portrayed. Ask yourself if they possess any particular quality that could not have been secured with the most ordinary equipment. Face the matter honestly and you will find that the real lack is all within yourself, at least a very large part of it.

And this does not mean that I would urge every worker to bend his energies to the production of salon or exhibition work. His tastes and temperament may not favor such a course. But what I do urge is that whatever work is taken up it be given the ordinary care and study that one would expect to give any other line of endeavor, either as a pastime or otherwise. One worker will find his greatest pleasure in making simple records of the

THE LOWER REACHES OF THE MERCED

scenes and events through which he passes, but he should have an ambition and find pleasure and satisfaction in making them as perfect as he can and with as great a degree of certainty as possible. Another will delight in the production of one particular class of pictures, the portrayal of one particular class of subjects. Still another worker may really feel but little interest in any kind of picture production, his chief gratification being found in the successful manipulation of the factors involved in the production of a good negative; while here and there we find a worker who is interested mainly in the optical or the mechanical features that his photography involves. Why should we try to interest any of these perfectly sane and sensible workers in the artistic possibilities of photography, further than to advise them concerning the purely mechanical requirements of ordinary good composition?

But to return to our subject: The proper way to learn is to study. If we tire of reading we can turn to reproductions of good photographs and study them. If we have a good landscape before us, let us ask why it is good, or at least why it does not contain too many faults. The shadows show that it was taken with the light from well to the side. What would have been the effect with the light from directly in front? The shadows show good detail, the result of full exposure; but what would have been the result with the exposure cut somewhat short? What would be the effect of adding a generous amount of sky to the picture, an extension to the foreground, a strip to either side? Could the picture be trimmed at either top or bottom, or either side, to advantage? Look at the picture with the idea of learning something therefrom. Do not, as we are all inclined to do, look at it simply to pass judgment upon it as to its appeal or otherwise to our particular fancy. In other words, the publisher of the magazine does not put these reproductions before us simply that we may run over them saying: "I like that, I don't like this," in a "He loves me, he loves me not" sort of fashion and to about the same profit.

And we must not forget that danger lies in trying to encompass to much in our easy, slipshod way. The vegetable grower does not try to rival the florist, the florist does not aspire to outdo the fruit grower, and the fruit grower does not dream of winning the world's record as a grain producer, yet the activities of them all deal with closely allied products of the soil. The painter does not concern himself with barns, fences, vehicles, furniture and the like, although the brushes and pigments employed are practically the same as those he uses in his appeal to our artistic side. But the photographer cannot tolerate any such restrictions. His equipment must enable him to produce orchids, radishes, or evergreen trees at will; his paints and brushes must enable him to apply a protective coating to a barn, a bungalow, or a baby's high chair, as well as to a piece of canvas stretched upon a frame of wood. The photographer wants to find out what lens and camera is best suited to all-around work, and in trying to get such an outfit he generally gets something that requires so much attention that the real work in hand, the making of a satisfactory photograph, must be denied some of the attention it should have.

And this brings me quite naturally to the matter of simple apparatus, the kind that is always the most advisable. Any one lens and camera has its limitations and the only difference between such lens and camera and any other combination is a difference in the kind and amount of such limitation. If we could properly estimate the disadvantage of complication, a factor that varies with the individual using the equipment, we would no doubt find that as simplicity was secured such disadvantage decreased and even disappeared long before the added limitations made any great inroads upon one's capabilities. In other words, the limitations of our simpler forms of cameras and lenses are fairly well balanced by their lack of complication in use. What we must learn is just what the limitations of our equipment involve and then satisfy ourselves with attempting only that which those limitations permit. And in investigating this side of the subject we will find, all too often, that the limitations that we feel hedge us about are really limitations imposed by a lack of knowledge such as I tried to set forth in the first part of this, that I fear the reader will find, a rather tedious article.

The Dynamic System of Symmetry

By Gustavus A. Eisen

With Illustrations by the Author

About three years ago I was invited to attend some lectures in the art studio of Edward B. Edwards, the well known New York artist. These lectures, by Jay Hambidge, on his rediscovery of the secret of Greek classical symmetry, were given before a small assembly of interested pupils; mostly artists, painters, designers, sculptors and architects. The writer was, I think, the only one not a professional artist in that audience, but not on that account the one least interested. Indeed, he had, in one respect the very great advantage over nearly all of the others, that he had nothing to unlearn before he could accept what was presented to all as new.

THE GREAT CHALICE OF ANTIOCH
Copyrighted by KOUCHAKJI FRERES

It need not be said that I became immensely interested, and fully realized, from the start, that this new discovery of an ancient secret was destined to revolutionize art the world over in a way that no one could have expected previously to this event. And it must be impressed upon the reader before doubts and objections arise, that this is not a new principle of art, as it consists simply of proportions in design based on the rules of the Greek standard. It may also interest the reader to learn that nearly all who attended these lectures began at once to use the system "each in his separate star", and with such success that a year later an exhibition of their work was held. This should suggest the importance of the system; and should there still be doubt, the testimony of such men as Edward B. Edwards and Professor Caskey of Boston must convince us that those who do not properly appraise this new discovery may find themselves left somewhat in the rear.

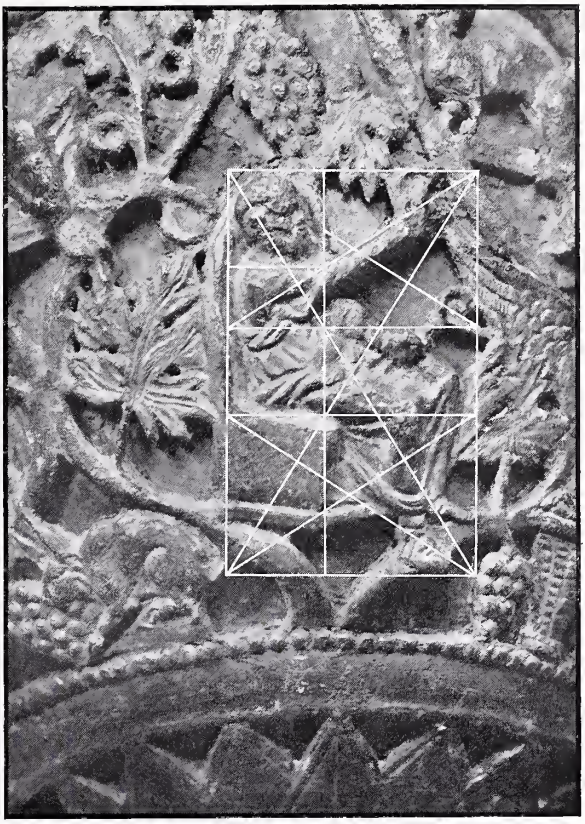
This symmetry of the Greeks, which Hambidge has named the Dynamic System, came to them from the Egyptians, who had constructed temples and decorations, even their hieroglyphics, upon this principle, three thousand years before our era. But it was only in the sixth century, B. C., that the Greeks began to know and apply the system, and there can be little doubt but that it was this same system that caused their art to rise, in less than a century, from mediocrity to the acme of perfection.

After the wars of Alexander, the Greek influence began to decline, and with it the employment of the Dynamic Symmetry. The latter, however, survived in Asia Minor, Syria and Alexandria until the end of the first century A. D., when it finally disappeared. It was at first thought that this symmetry was disregarded as early as the fourth century B. C., but researches during the last two years have revealed a great many vessels, especially from Pompeii and Syria, having their form accurately based upon the same system as the vases of the Greek classical period. The most famous of these vases, and probably the most remarkable object of art now known, is the Great Chalice of Antioch in Syria. This vase, a photograph of which is reproduced herewith, is a particularly suitable subject for study by those interested in the rudiments of the dynamic system.

It is rarely that a great discovery in archaeological art is of such character as to be capable of affecting photography, and thereby prove suitable for discussion in a magazine of the scope and aim of Camera Craft. The Dynamic Symmetry or system is, however, equally applicable to any art, craft or trade that concerns itself with man-made objects. And while the characteristics of this system are as yet practically unknown to all but a few devotees, the time is undoubtedly near at hand when it will again be employed in every department of art, architecture, painting, sculpture and manufacture, the designing of costumes, the forming of household utensils, the arrangement of type forms in circulars, advertisements, catalogues and books; these and endless other different forms of craftsmanship may readily be brought under the influence of this system and be greatly improved thereby.

For instance, if one be called upon to design a vase, a chair, a house, a picture of human or other figures, a landscape with trees, or even a photographic landscape with the moon included, a subject so familiar to the members of the California Camera Club of twenty-five years ago, he will, nearly always, hesitate and be undecided as to where he should place the most important point or line in the composition. In order to arrive at a determination as to the best arrangement, he proceeds to cut away or add to height or width, now and then holding the composition up at some distance before his eyes, all the time looking wise, still perhaps with little success. If he be a great artist he may succeed in the end, although even Michel Angelo and Raphael were not always successful. But if one will take the trouble to learn a little of Dynamic Symmetry, he will not alone save time in constructing his compositions, but he will have found a rule or rules by which he can understand the cause of his previous want of success. He will, in addition, learn the proper procedure and be able to show possible critics that they know not whereof they speak.

To facilitate their work in this very line of proportions and pose, the Renaissance artists based their designs upon various geometrical diagrams, a general favorite being a construction based on triangles and squares. This is now called the Static System by Hambidge; and, while it is better than no system at all, it certainly is greatly inferior to the dynamic system of the ancient Greeks.



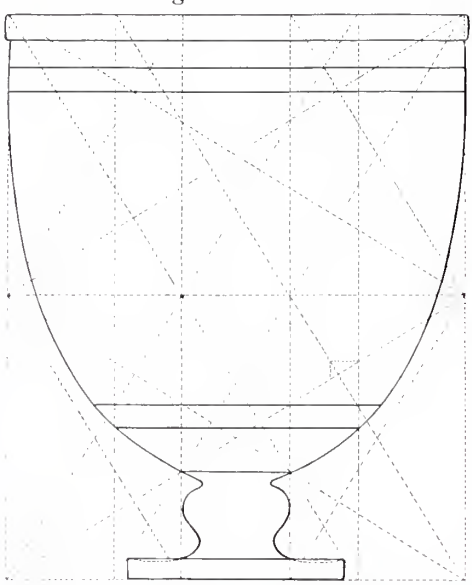
One of the Figures on the Antioch Chalice with its Dynamic Diagram Consisting of the Area of a Whirling Square Reetangle—The main parts of the body occupy the main areas of the diagram. Copyrighted by Kuchakji Freres.

Instead of triangles and squares the dynamic system makes use of a peculiar set of rectangles, known as root rectangles, in the subdivision of which squares do enter, but always as a part of a root rectangle. These rectangles are divided, interiorly, by diagonals, and by lines drawn from the angles of the rectangles, perpendicularly against the above diagonals; that is, they always form, with them, right angles. By drawing horizontals and upright lines from the nodes of the diagonals, a diagram is produced in which every single part or area possesses the same form and proportions as the whole rectangle. Every unit of these rectangles thus becomes a proportional part of the whole. The use of this diagram consists in employing its outlines as tangents to the design, and its nodes and inner lines as guides for the most important points and lines in such design. The construction of the diagram is simple, and its application is such that a child of ordinary mentality can learn it in a few hours. An artist should comprehend it, in the twinkle of an eye, at the first demonstration.

It is not possible to enter upon a full discussion of the manner in which these root rectangles are constructed; a few words must be made to suffice. A root 2 rectangle is produced from a square, from any square, by extending the base line of such square until it becomes equal in length to the diagonal of the square, and then constructing a rectangle on this line as base, with the same height as the square. Nothing can possibly be more simple and easily understood than that. A root 3 rectangle is constructed from a root 2 rectangle in exactly the same way, its base being the length of the diagonal of the root 2. The construction of these rectangles from 2 to 5, the highest ordinarily in use,

is learned in ten minutes. In the construction of the whirling square rectangle, the diagonal of half of the square is used instead of the diagonal of the whole square. The mystery of these rectangles is fully explained by Hambidge in his magazine, *The Diagonal,* published by the Yale University Press, New Haven, Connecticut. The numerous numerals used by Hambidge in describing the rectangles, while of great importance to the student are not necessary to the beginner, and should not be allowed to deter him from learning the system.

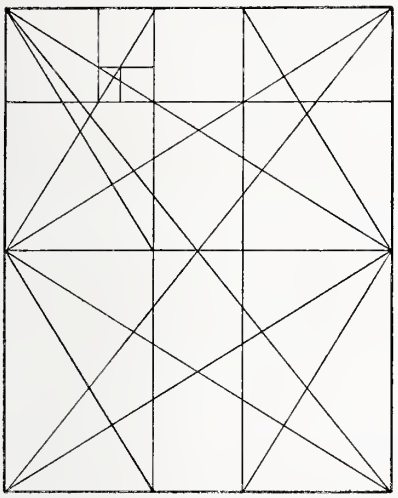
The manner in which this system may be used is best shown by the diagrams reproduced with this article. One represents a sculptured figure from the Antioch Chalice, based on a whirling square rectangle, the outlines of which act as tangents to the body of the figure. At the same time the inner divisions of the rectangle correspond with the principal divisions of the seated figure. The other diagram shows the outlines of the Antioch Chalice constructed on a rectangle that consists of two superimposed whirling squares, each of the proportions of 1:618, the whole having the proportions of .809, as calculated after minute direct measurements, forming one area. It will be seen that the chalice form is determined by the lines of the diagrams. But the reader should understand that the same diagram could serve for the construction of almost an unlimited number of vases, each of different type, form and appearance. And this is true, not alone of vases, but of portraits, figures, landscapes and every other subject that achieves some portion of its beauty from proper posing, proper arrangement and harmonious proportions. This because, in these rectangles, every unit stands in relation and harmony to the whole.

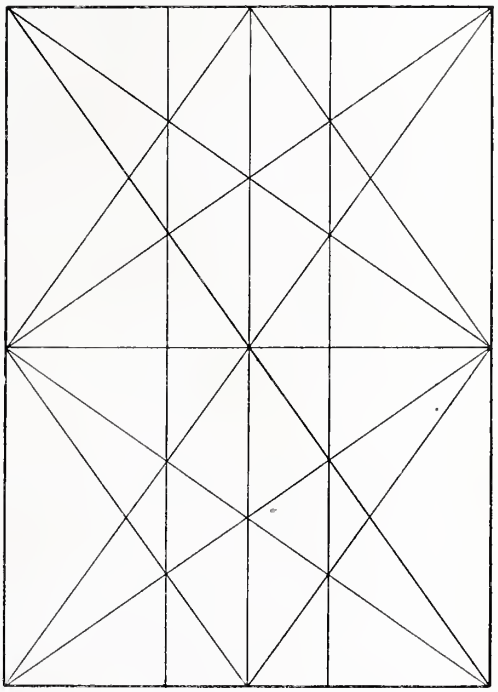


Outline of the Antioch Chalice and its Dynamic Diagram, a Rectangle Consisting of Two Superimposed Whirling Squares—The chalice itself having been compressed, differs from its original form, which is the one shown

It is these characteristics of the root rectangles and their combinations that make them valuable to the photographer, and especially to the pictorial photographer awake to the demands of art. There are two simple and practical ways in which he can use the dynamic symmetry, but only a few words must suffice to point out their special merits. One is to mark, with black waterproof ink, a root rectangle on one's ground-glass or focusing screen, one which comes nearest in area to the glass itself, so that no unnecessary space may be wasted. A 5x7 focusing screen can, however, be used to good advantage as it is, because its proportions are very nearly the same as those of a root 2 rectangle, the excess area of the plate being but one millimeter at one end. After the rectangle is marked out with ink, draw diagonals, perpendiculars against these diagonals, from each corner, and mark the horizontals and vertical lines passing between the eyes of the rectangle. A few trials, with this diagram marked on the focusing

screen, in taking a group, a landscape, or the like, will show the benefit that can be derived from its use. The photographer has but to arrange the most important points in his picture to coincide with the nodes in the diagram, the principal





The above shows a 4x5 focusing screen divided according to the Dynamic System. The area corresponds approximately to two whirling square rectangles. The subdividing can be done in different ways. At the right is a 5x7 diagram that very nearly corresponds to a root 2 rectangle

upright line in his picture to coincide with the principal upright line in the diagram, and the advantage is apparent.

Another way in which the system can be used is by constructing a similar diagram on transparent paper, corresponding as nearly as possible to the area of the paper to be used for the intended print. If you have an old print that, through seeming inharmonious as to form or proportion, you desire to cut down to better its shape, place one of these transparent outlines over it and see how near its important points coincide with those of the diagram. The best manner of improving the print will then suggest itself at once.

Even if it is found undesirable, for some reason or other, to cut down one's print or to mark one's focusing screen to fit a dynamic rectangle, one may still be greatly benefited by applying to either a diagram constructed on the same general principles as in the root rectangles. While these latter diagrams are of great value, they are defective in that but one-half of the resulting divisions will have the same proportions as the whole area of the print. But as the photographer is not always able to arrange every detail in his picture as most desirable, this may not be of vital importance. In a landscape of course one cannot control the outlines absolutely, but if, for instance, there is a tall tree or a church spire included, one might be able to so turn his camera as to place this object in coincidence with one of the main uprights, or with the main

areas, of the diagram; and doing this only will be well worth while, as the worker will soon learn. In photographing a figure the composition will always be benefited by arranging the pose so that arms and legs coincide with or at least parallel the diagonals in the diagram.

Those who may be interested in the Antioch Chalice and desire more information concerning this most wonderful object, are referred to the January, June and July numbers of this year's *New Era Magazine*. My reasons for illustrating this article with photographs and diagrams of this chalice is that I have been studying it in connection with the dynamic symmetry, and also because this object constitutes the most beautiful, as well as the most important, antique object known, one from which every artist might learn and profit. The chalice, made in the middle of the first century, was found in Antioch, in Syria, ten years ago. It carries twelve portraits of Christ, Apostles and Evangelists, the work of an artist who had known them personally; and who, besides being a student of the works of Scopas, had acquired a skill in sculpture unsurpassed either in ancient or in Renaissance times.

Camera Club's First Exhibit

The first exhibit of the members of the San Diego Y. M. C. A. Camera Club, recently held in the lobby of the Association Building, has just closed. The pictures were on display about a month. Members submitted as many prints as they desired, from which the committee on selection picked the three best from the number submitted by each member. In all about fifty prints were hung, these represented the best work of the Club. As it was an exhibition and not a contest, no awards were made.

At the last meeting of the Club, a committee appointed to select the four best pictures, decided upon the following: "The Thinker", by B. H. Haddock; "A Child Study", by Harold E. Lutes; "In the Cuyamacas", by H. L. Miller, and "Moonlight", by J. T. Nicholson, and "Eucalyptus", by Harold A. Taylor, was adjudged the most artistic piece of work submitted, but being president of the Club, and a member of the committee making the selections, Mr. Taylor's modesty caused him to protest its selection as one of the four. "Swiss Scenes", by Dr. R. L. Schneider and "A Foggy Morning", by I. N. Lawson, Jr., both showed excellent pictorial quality.

Much interest is being shown in this newly formed Club. Meetings are held every Thursday night, when many interesting phases of photography are discussed. "The Making of Autochromes" was the subject presented by Harold A. Taylor at the last meeting, while such subjects as "Aerial Photography", "Marketing Your Photographs" and "Press Photography" have been discussed up to date.

If top-notch efforts yields you no happiness, there's something wrong either with you or your efforts. Sit down and do some analyzing.—*Forbes Magazine.*

Some Constructive Criticism

By Edgar Felloes

Illustrations by San Diego Y. M. C. A Camera Club Members

EDITOR'S NOTE: The pictures reproduced in connection with Mr. Felloes' article which follows, are the ones referred to in the notice of the San Diego Y. M. C. A. Camera Club exhibition on the opposite page. The original pictures were handed to Mr. Felloes without any explanation as to what they were or from where they came, but with the request he mentions. We feel quite sure that our good friends of the San Diego Club would welcome rather than resent the criticisms offered, particularly as such criticisms would benefit a large circle of our readers. Our making such use of the pictures is not intended as any reflection upon either the judgment of the committee that selected them or of the pictorial capabilities of the members of the Club. We simply felt that the pictures gave us an opportunity of presenting an article along the lines requested of Mr. Felloes, and that this in turn permitted us to carry out our plan of maintaining, as far as possible, some connection between our illustrations and the text that appears upon the same or intervening pages.

The photographs herewith reproduced were handed me by the Editor, with the request that I furnish him with a written constructive criticism, something that would be helpful to his readers, something not too dogmatic, not too much in the abstract, but something of a concrete nature that the reader could use and apply. What follows is submitted as the result of my efforts in that direction.

IN THE CUYAMACAS — By HOMER C. MILLER

"In the Cuyamacas", a pleasing landscape; the photographer here shows appreciation of the pictorial possibilities of the scene and has made the exposure at an opportune moment. The direction of the clouds to the right is excellent. They repeat the line of the outreaching oak limb happily. From a memorandum on the back of the print I learn that the original negative was a 3¼x4¼, made on a Standard Ortho plate, with the aid of a ray filter, and later enlarged with a soft-focus lens. Right here, I think the photographer did wrong in allowing his lens, in making the enlargement, to blur the trunk and limbs of the tree. As the smear of gray surrounding the darks is neither artistic or true to nature, what has it to recommend it? We are most of us familiar with the merits of backed and double-coated plates as a means of keeping the lights of our picture from encroaching on our darks; in short, to avoid halation we pay extra money for these plates. Does it show good judgment if, at the time or later, we permit our blacks to encroach on our lights by the abuse of a soft-focus lens? If one thinks along this line it may prove a wholesome check when focusing. Some subjects will lend themselves to "soft focus"; while, on the other hand, subjects of strong contrasts should be more carefully handled. In the reproduction of this picture, the blur I have alluded to will not show so plainly on account of the half-tone dot in the whites, but the reader will probable trace some of it. I hope he can, for what I have written is more especially for the new recruit to whom the hint may prove useful. I will now speak of a fault of construction. It is called construction because a picture is built up; it must be, if we are to get art into it; and there individuality comes in; individuality, the most precious thing in art; it is as important as the endorsement on a check.

In a photograph of a scene we cannot shift things as a painter can, but we can emphasize. A fault in this picture is, the eye is too quickly in it, as the foreground lacks interest the eye reaches the trees at once. A more interesting foreground would give added pleasure, the trees would be pushed back, the perspective would be increased. And now my memory trails back to a certain impatient photographer who said: "It's all very well to say do this and that, but how am I to know just what to do?" My reply was "Experiment". Though this was a good many years ago, I cannot advise better now; but we can do a little experimenting on this picture; it will help in building up pictures of our own. We should, of course, do a little practical reading on art subjects, also collect some reproductions of pictorial work of known merit; still, from these last we will not learn much until we have "learned to see"; so it's the reading first.

For our experiment we shall need a tube of black crayon sauce, a stick of soft white chalk and two paper stumps, to be procured at the art store. To return to our picture: On the extreme right are some patches of sunlight, also the cast shadow from the oak limb. Why smother the patch of sunlight with a nondescript shadow? The photographer, when enlarging, was more proud of is lens than he was of that shadow. Now, the shadow counts; any particular make of lens does not count. Let us place a little of the black chalk on a piece of paper, touch the stump in it, and on a clean part of the paper work the

CHILD STUDY By HAROLD A. LUTZ

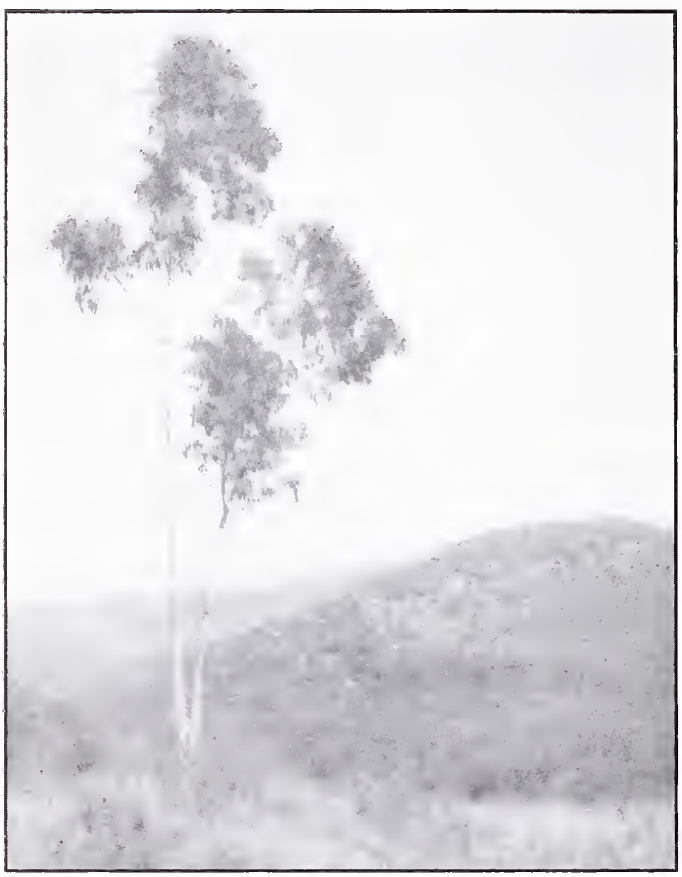
THE THINKER By B. H. HADDOCK

loose chalk off the stump so that there is only a small trace of the pigment left, and that should be evenly spread. With the stump, darken that cast shadow a little, about half as much again; but be very careful not to lose the "drawing", and by that is meant the various shapes of our shadow. Do not try to improve it, just follow copy exactly, and immediately the light patches will look brighter. In the left hand corner of the picture an irregular line, perhaps caused by a depression in the ground, has its beginning. Follow that line and develop it with the chalk; make it a little darker, but do not make it one continuous line. Follow that line to its end and that will lead the eye right across the foreground, from the lower left corner to the patch of sunlight. Between the second and third rock farther in the picture there is a space like a path; from this there is a curve that swings centerwards, coming forward to and connecting with our first line. Develop this curve in the same manner, and when this is done the eye will follow it around that rock and reach the trees.

There are other bits in the foreground that can also be assisted. Now, by scraping some of the white chalk and dipping the second stump into both the white and black, various shades of gray will be obtainable. With a light gray, touch up the lights of the nearer of the two bushes near the center of the picture. The shadows of this bush should be left entirely free from the gray; they might need a little strengthening with black on the under side because, where light is strongest the shadows are crispest and darkest. There are a lot of photographers who fail to realize this. With them it is blend, blend; they are eternally blending, and that kind of work is never virile, it is anemic and reminds me of that timid type of man who always "ventures to suggest". With this bush brightened it will be detached from its mate, which should be left as it is, and it will be found that we are getting more space around our objects.

With the mixed chalk we gray the distant hill, but the bushes along its base should be left; they are fine as they are.

Having got this far in our experiment, place the picture at a distance and study it. Perhaps that line of light at the top of the bank could be brightened a little with the white chalk; this is good in practice, because, for effect, our strong light should be near our deepest dark. I will now remind the reader that this worked-up print was our experiment; we did our thinking on it. If we liked the result it is easy to make changes on our negative; the parts we wish darkened we will reduce locally, and the parts to be lightened must be intensified, also locally. In both cases use the solutions weak so that the chemical action will not be too rapid. A couple of hours will be sufficient time to experiment with the picture and make changes on the negative, and that would be time well spent on a picture intended for exhibition. If, on the other hand, from any cause, our work on the photograph was unsatisfactory, sprinkle bread crumbs over the surface of the picture and with the palm of the hand lightly roll the crumbs over the print; by this means the chalk will be all removed.



EUCALYPTUS By HAROLD A. TAYLOR

"Eucalyptus". Another soft-focus landscape, but in this case the lighting lends itself to this treatment. If we cover the picture down as far as the hills we can enjoy the very pleasing effect of aerial grays; but remove the cover and the white sky is brutally harsh. I am not a cloud crank, clouds are not so effective here as a tint in the sky. If we were to apply a graded tint from the top down, the print would be greatly improved, for we should then have an atmospheric effect over the whole picture. This is not a difficult thing to do, and I think this attractive picture is worthy of the trouble.

"Moonlight". Most of us have made a moonlight at some time or other:

MOONLIGHT By J. T. NICHOLSON

we can't avoid it; like the measles, it just gets us. But I am willing to admit I am not proof against another attack of moonlight. Had I been along with a camera when this picture was made, I also would have used a plate, not altogether for the scene alone, but for its possibilities. That strip of black along the bottom of the picture should have been avoided. If the bit of land it represents contained anything of interest, a second plate should have been exposed on it, giving plenty of time, and then the picture could have been made from the two negatives, the combination would have been easy.

Supposing such a combination was satisfactory, I would repeat a light, only one quite subdued, close to the right hand side of the picture near the bottom, the object being to attract the eye over in that direction. Most of the interest in this picture lies to the left of the center line; there is not enough interest to even detain the eye on the right half. When looking on this picture the eye will possibly be attracted by the two patches of light and it will be puzzled between the two. This is wrong; there should not be two climaxes in a picture, as it is disturbing and confusing. We must sacrifice one, and as the upper light patch is more easily handled, we can trim it off or we can break clouds over it. The chalk and stump will quickly show the effect of the latter remedy. By reducing the area of bright light in that manner we accomplish our end by causing one of them to take second place.

I spoke of the possibilities of this scene as a subject for a composite picture,

mainly because so little work in the way of registering would be required. By putting a dark object before the sky on the right of this picture, that wide expanse of gray paper would immediately appear as a sky full of subdued light, the contrast with the dark object making it so. A suitable rocky foreground could be found almost anywhere; preferably one in which some of the rocks pile up pinnacle fashion; or one might select a tree for the purpose. This should be taken so that the pinnacle or tree will occupy a position near the right hand end of the picture, and be high enough to project into the sky. Experiment will show how high this object, whatever is used, should stand. This determined, the negative should be printed in as a silhouette; not black, but as a dark gray. A black silhouette will destroy the effect of air in the foreground, not so a gray. The lighter patch of water across the picture, near the front, is beautiful, and on that account can be advantageously accentuated by local intensification. By these means the picture can be built up; but remember, whatever is added or emphasized must not challenge that light patch on the water.

"Child Study". This could have been greatly improved by liberal trimming. The mass of black like a letter L printed backward, is unsightly; a better effect would have resulted by holding this part back in the printing, and thereby obtaining a gray. Still another improvement would be achieved by using the irregular vignette. The magazines are full of examples of these. *The Saturday Evening Post* gives at least a dozen examples each week, and it seems strange that photographers do not avail themselves of the advantages offered by this easily secured vignetting effect. I have also noted another peculiarity, and that is the neglect, in home portraiture, of the possibilities of the use of combined daylight and flashlight. While examples of this sort of work are not common, they are easily made and effective. Anyone interested in indoor portraiture will find experimenting along this line, using the ordinary Eastman flash sheets, if more elaborate equipment is not available. With the subject placed near a window and the flash sheet located back in the room where it will light the shadows, results may be secured that are very pleasing.

"The Thinker". The charm of this portrait lies in the husky little chap himself. I presume the print was made from a snapshot, as very little thought seems to have been given to its production. The child is of heroic proportions, owing to the nearness of the camera, while the background is uninteresting. The white sky being so near in tone to the child's white jacket, tends to flatten the picture; and, had the rock occupied the entire background we would have had a more forceful result.

While this picture ends my undertaking, I hope that some of my readers will be tempted to do a little of the suggested experimenting on some of their own photographs, for much may be learned by so doing. If photographers will only look upon their negatives much in the same way that authors regard their collected notes, not as the finished story, but as a valuable aid to it, photographic work must improve. This, because the photographer would become the master, instead of as would seem from most of the work that is offered for our approval, the negative is a despot of whom its creator is too often afraid.

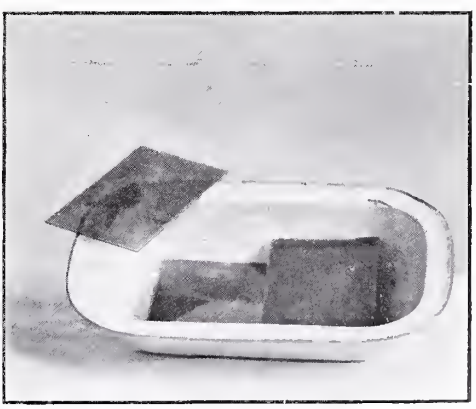
Developing in the Tropics

By A. Chargois

With Illustrations by the Author

For over thirty-five years I have practiced photography in North Queensland; most of the time as a traveling photographer, my business taking me into bush towns and little farming centers, where the only available water supply was the nearest muddy water-hole. My old silver prints, produced under these conditions, are good today; and I am often called upon to copy an old photograph I had taken "way back" over thirty years ago. After so many years fighting and overcoming the numerous unfavorable climatic conditions, the following plan of development has been evolved.

The requirements are: The coolest part of the day, the coolest obtainable water and solutions, a make of plate that will stand solutions at eighty degrees Fahrenheit without giving trouble, and an acid-alum-hypo fixing bath that must not be overworked. As to particulars; the coolest period of the day is early morning, when, generally, plates may be developed, washed and dried before the heat of the day become excessive. To cool washing water I use a canvas bag, hung up in a draught. With the temperature of the atmosphere at ninety to ninety-five degrees, and the temperature of the water almost as high when placed in the water-bag, the early morning temperature of the latter will be found, after all-night cooling, to be from sixty to seventy-five degrees, according to the dryness of the atmosphere. The plates I have used mostly have been Illfords, and these easily stand a temperature of solutions and wash water up to eighty degrees. As to developer, I can recommend no special formula, but I have been using pyro-soda; and, while of later years I have been using acid-alum-hypo of usual formula, for many years I used only plain hypo. My alum bath is the ordinary saturated alum solution.



My procedure is as follows: In the evening I prepare for the morning's development by filling the water-bag, or bags, and hanging them in a draughty place. The solutions, the pyro-soda, the hypo and the alum, are in bottles that are loosely covered with a cotton cover, such as the top of an old sock or sleeve of an old cotton singlet. These are placed in a pie dish, half filled with water, and this, like the water-bag, is placed in a draught. These preparations made, I go to bed with the idea of getting up early.

Up in good time, I proceed to develop as usual. I always transfer the negatives direct from developer to fixing bath. My developing dish is made of sheet zinc, which will stand pyro and M-Q, but not amidol. The fixing bath is in a granite ware pie dish of such a size that negatives will lie across the narrow way with a space of half an inch or a little more between the film and the bottom. When fixed, the negative is held in the hand, while cold water is gently splashed over the film to rinse off the bulk of hypo; and then, held more horizontal, the saturated solution of alum from the pickle-bottle is flowed over several times and the negative laid, film up, on the side of the dish for five or ten minutes to permit the alum to soak into the film. This done, the negative is rinsed as before by splashing on cold water and allowing it to run off; the object of working in this way being to economize the supply of cold water.

The real washing is effected in a similar pie dish, the negatives being placed, film down, across dish and covered from the contents of the water-bag. Soaking in this position allows the heavy hypo solution to sink away, and as this method of washing, film down, very efficient, fifteen minutes should suffice. When washed, wipe both sides of the negative free from surface water and place in draught to dry.

The first illustration herewith shows the method of cooling the four solutions by standing the cotton swathed bottles in a dish of water and placing the whole in a shady place where there is a breeze. The other shows the pie-dish used for washing, with a negative that has been flowed with alum solution resting on the edge, another in position for washing, and a third lying face up on the bottom of the dish.

If a fresh fixing bath is to be used, it is advisable to mix it up just before it is required, so as to take advantage of the reduction in temperature that results, The use of formalin is unnecessary; and, my experience convinces me that it is almost certain to result in a film that is inclined to perish in the course of a few years.

The day returns and brings us the petty rounds of irritating concerns and duties. Help us to play the man; help us to perform them with laughter and kind faces; let cheerfulness abound with industry. Give us to go blithely on our business all this day, bring us to our resting beds weary and content and undishonored, and grant us in the end the gift of sleep. Amen. ROBERT LOUIS STEVENSON.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

Vol. XXVII San Francisco, California, June, 1920 No. 6

Camera Craft Is Late

Difficulties, obstacles, troubles and the like, hinging on paper shortage, transportation shortcomings, and other things, all combine to delay us for the last few issues until we are now over a month behind in our date of issue. This we shall endeavor to make up, a little at a time, until our regular schedule is again resumed. We could, of course, do as so many of the larger publications have done, combine two issues, but that creates an endless amount of trouble for the future, owing to the large number of our readers who preserve and bind their copies. A volume made up of eleven issues would create endless confusion. Our magazine is one of the few that can furnish any back number ever published, and one of the few such that has maintained a uniform size of page throughout its life, thus rendering itself particularly suited to the purpose of being bound up and preserved as a history or compendium of photographic advancement for the twenty years during which it has been published.

We trust that our readers will bear with us in our difficulties and feel assured that only time and physical endurance prevents our replying to all their letters of inquiry as to the cause of its failure to arrive as it should. But we would like to call the reader's attention to one important matter, and that is this: It is only the date on the cover, the contents page, the first reading page and the editorial page that is untimely. Every line of printed matter, every advertisement is just as up to the moment as if the magazine was dated two months ahead of the date actually given. In fact, our being somewhat off our regular publication date has enabled us to place some advertising in the hands of our readers a week or more sooner than would have been the case were we on our usual schedule.

Understanding this, and the further fact that such a small part of our reading contents contain any of the "news" element so important in publications of a different character, we believe our readers will feel that our unavoidable delay in getting out the last few issues can be overlooked, or at least considered as but an unavoidable inconvenience that deprives them of but little, if any, of the returns they quite rightfully expect for their subscriptions so generously sent in. It is hardly necessary for us to do so, but we hereby give you our assurance that being late is more distasteful to us than it can possibly be to the most impatient and exacting reader we may have on our long list. And this does not mean that our readers have displayed impatience; rather, their letters, abundant as they have been, have expressed a kindly interest, coupled with their concern, lest they had missed a copy that should have been received. And this kindly spirit and evidence of appreciation has made our inability to reply to all such letters more regrettable than would otherwise have been the case.

The Pacific Northwest Convention

The Photographers' Association of the Pacific Northwest will hold its next convention at Tacoma, Washington, September fourteenth to seventeenth, inclusive. This association is made up of photographers from Idaho, Oregon, Montana, Washington and British Columbia, and they are showing unusual interest and enthusiasm in the matter. Never before has the request for dues met with such a prompt and hearty response, and the officers are more than gratified at the prospects of a rousing good convention. The National Association has advised that a charter would be granted, thus assuring the latest and best work. Diplomas and ratings will be awarded by a competent jury and each member is requested to submit an exhibit, details of which can be obtained from the Secretary, Frank J. Lee, 1535 Commerce Street, Tacoma, Washington. Photographers within the territory covered by this association should not miss this opportunity of measuring up their work with the others, and they should not overlook this opportunity of enjoying displays, demonstrations and the like, all of a helpful and educational character.

The Fourth Los Angeles Salon

The Fourth International Salon under the auspices of the Camera Pictorialists of Los Angeles will be held, as before, in the Fine Arts Gallery, January third to thirty-first, 1921. As the same thorough and painstaking effort, as heretofore, is to be expended, such effort, reinforced by the quite enviable reputation already established can hardly do less than assure a most successful exhibition. As last year, our office will be supplied with entry blanks that we will be only too glad to hand out or mail to those requiring them, it of course being impossible for the committee to assure all desired contributors being reached by even their generous sending of prospectuses to their carefully compiled mailing list.

The Canadian International Exhibition

The Toronto Camera Club will again hold an international exhibition of photography at the Canadian National Exhibition in Toronto, from August twenty-eighth to September eleventh, 1920. The success of last year's international exhibition has justified the hope, then expressed, that it would become an annual event.

The Canadian National Exhibition Association has made available two rooms in the Applied Arts Building in which the committee hope to hang between three and four hundred prints, and they appeal for the support of the pictorial photographers of the United States, so generously forthcoming in past years. Entry forms giving particulars of the exhibition can be obtained from L. J. Geddes, Secretary, 2 Gould Street, Toronto, Canada, or from CAMERA CRAFT office.

Our Postal Magazine Club

Turn to our editorial under the above heading last month, read it over, and let us hear from you if the idea appeals. We want suggestions and want your aid.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Logical Sizes For Plates

When a responsible committee of a large industry issues a new standard series of sizes or gauges for their commodities, some orderly method of relation or co-ordination between such sizes is looked for. One looks in vain for any trace of system in the list of standard sizes for small plate cameras issued by the British Photographic Manufacturers' Association in April last. There are probably good reasons why well known old but haphazard sizes must be retained, but it is impossible in the list of new sizes to find any trace of aiming at a definite principle. The new sizes are in metric measurement, but so far from introducing any co-ordination they actually destroy the old relation of "whole," "half," and "quarter" in the Continental series of 9x12 cm., 6x9 cm., and 4½x6 cm. by altering the fwo former to 8x12 and 6½x9.

I can only trace three aims in this list. "Let's chuck out a few sizes." "Let's give the Decimal Association a lift by shelving inches." "Let's number the list to give some appearance of order." It is safe to say that such numbers will always be ignored outside the catalogues.

The object of this paper is to give the result of an investigation into the possibility of providing a theoretically logical and co-ordinated series of sizes.

In the evolution of plate sizes a certain co-ordination was aimed at in the old series of whole-plate, half-plate and quarter-plate. There are clearly great advantages in having a series in which the larger size, cut exactly in half, provides a standard smaller size, and this advantage is very apparent in the matter of sensitive paper. It leads to economy of glass and paper, both to manufacturer and user. It is fairly clear that the first "half-plate" must have really been half of 6½x8½, namely 4¼x6½, which is still a stock size. Why, then, was half-plate altered to the present 4¼x6½? The answer lies in the proportion between the two sides of the plate, and as this matter of proportion is a vital one, I must examine it more carefully. The ratio of short to long side in the whole plate, evidently thought satisfactory by old workers, is 1 to 1.3. If cut in half the ratio of the new plate becomes 1 to 1.53, evidently much too lanky a plate for the taste of those days, and it was accordingly altered to 4¾x6½, which is 1 to 1.36. The true quarter of a rectangle always retains the same ratio as the large size, and therefore the quarter-plate cuts four out of a whole plate to this day, and has the same ratio of 1 to 1.3.

Many workers, myself included, prefer a plate of good length in proportion to width, and 5x7½ with a ratio of 1 to 1.5 is my favorite. Two of the new sizes have this proportion. Now, if plates of this proportion of 1 to 1½ are cut in two, the new size has a proportion of 1 to 1⅓, which, if cut in two, again results in 1 to 1½, and so on alternately.

Here let me diverge from the main theme to see what ratios appear to be favorite ones. Leaving out such special-purpose sizes as stereo and lantern, and keeping to sizes of whole-plate downwards, the range is from the dumpy 4x5, 1 to 1.25, to the lanky post-card, 3½x5½, 1 to 1.58, the average between these two being 1 to 1.415, which, as will be seen presently, is almost exactly the ratio I ultimately arrive at for a standard. But in large sizes, 8x10 upwards, the present sizes in use are all dumpy, chiefly a ratio of 1 to 1.2, or 1 to 1.25. Whether this is from a real need or from custom I cannot say.

To come back to the problem of devising a logical series.

At first sight a series of 1½x2, 2x3, 3x4, 4x6, and so on, is good. Each plate cut in two provides a smaller size. This principle, I may say at once, seems inevitable as conferring economy in many ways in plates and paper. Then the plates are alternately of the simple 1 to 1½, and 1 to 1⅓ ratios. But,

unfortunately, this does not give the user a choice between squat and lanky sizes, for the 3x4 size man can only use a long-shaped plate by getting one of double or half the area of what he wants. It would be possible to give such free choice by adding another series of 1½x2¼, 2¼x3, 3x4½, 4½x6, etc. But this, while doubling the number of sizes to be provided, would yet not provide intermediate half-way areas.

On the whole, I found it worth while investigating whether there was not some value between 1⅓ and 1½ which would provide a ratio between the shorter and longer side of a plate which would remain constant when the plate was cut in half.

I soon found this perfect ratio to be square root of 2 or 1.414, which is almost exactly the average of favorite small plate sizes, and therefore a reasonable compromise between advocates of squat and of lanky plates either of whom will only have to sacrifice a small strip of the surface of their plate, at top for the "squat" man, and at sides for the "lanky" man, to get their desired print.

It is unfortunate that this ratio is incommeasurable, for whether we give sizes in inches or centimeters, it is inconvenient to have them in other than whole numbers or very simple fractions.

But in setting a slide rule to this ratio of 1 to 1.414, it is soon found that the simple numbers, 6 to 8½, almost exactly represent it, and can therefore be taken as a standard rectangle which, when halved, will provide two rectangles of half the area but of the same proportions.

Such a series I, therefore, think to be best for standard sizes of plates, although there remains the doubt whether the jumps to half or to double any one area of plate are not too great.

Another glance at the slide rule shows that 5x7, a ratio of 1 to 1.4, is the next nearest available to 1 and to the square root of 2. If cut in half this becomes 3½x5, which has a ratio of 1 to 1.43, and halved again the ratio comes back to 1 to 1.4.

I will label this series D, and the 6x8½ series C.

It is a fortunate fact that the area of plates in the series D comes almost exactly half way between the area of those in series C, and that if both series are adopted within the range of most used sizes, there will be a far more uniform series in areas than ever yet provided, without, I think, providing an excessive number.

There are only eight sizes from "whole plate" to "vest pocket."

It is a minor tragedy of photographic science that the early divisors of whole plate size only missed adopting a perfect ratio by half an inch in one dimension.

A table, made up of these two logical ranges of sizes, would form a series as follows:

D series	1¾x2½	7 x10
C series	2⅛x3	8½x12
D series	2½x3½	10 x14
C series	3 x4¼	12 x17
D series	3½x5	14 x20
C series	4¼x6	17 x24
D series	5 x7	20 x28
C series	6 x8½	24 x34

Any plate cut equally in two provides the next but one smaller size, of half its area.

All in the series have practically the same ratio of width to length, namely, not less area of the two nearest sizes.

Each plate is in area near to the average than 1 to 1.4, not more than 1 to 1.43.

Three plates in the series, 5x7, 4¼x6 and 2½x3½, are already stock sizes in inches.

The present 17½x24 sheet of printing-out paper, after taking half an inch from the edge, gives all the sizes in C series without waste by halving repeatedly; and all the D sizes can be cut without waste from a stock width, 20 or 40-inch, of bromide or printing-out paper.

The same series is theoretically perfect as standards in the printing trade for books, etc., quite apart from photography.

The proportion of the rectangle which is the basis of this series is the only proportion which remains unaltered when the rectangle is halved. Its length to its width is as the diagonal of a square is to the side of the square.

In conclusion, I repeat that such a series is equally applicable to inches or centimeters, the latter taking the higher numbers. As, however, British plate users have only bought plates in centimeter sizes for use with cameras of foreign origin, I can see no reason for abandoning our British inch.—Alfred Watkins, F. R. P. S., in *British Journal of Photography.*

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Actinic Value of Light

Two or three recent queries have been concerning the term actinic light, or rather, actinic value. Even a recently published explanation fails somewhat to clear up the matter, because it compares the exposure necessary for an object in shadow and one in sunlight, thus implying that illumination and actinic quality are alike. As the term is used in photography, the degree with which any light will affect the sensitive emulsion of a plate, film or paper is a measure of its actinic value, a value that may not be apparent to the eye as is ordinary illuminating value. For example, photographic emulsions can be safely exposed to an amount of orange or ruby light in which ordinary print can be easily read by reason of the illuminating value, while the same emulsions would be strongly affected by a blue light of such low illuminating power that the same print could hardly be distinguished. And aside from this lack of relationship between illuminating value and actinic value, there is another reason why the eye cannot be depended upon to judge in the matter, namely, its power of adaptability to the strength of the light. We all know how dark a room may appear as we enter it from bright sunlight out-doors; but, as our eyes become accustomed to the decreased illumination, the light seems quite strong and satisfactory. It is this adaptability of the eye that makes it so hard to judge exposures, even where there is no marked variation between actinic value and strength of illumination. We may learn that red and yellow objects reflect light that is weak in actinic value and make allowance therefor, but even then it is almost impossible to recognize quite marked differences in the light falling upon the object being photographed; as for example, the decided red or yellow tint of the light that sometimes prevails near sunset. While of course the light sensitive ratio of printing-out paper and plate or film emulsion is not exactly the same, the relative sensitiveness is about the same, so that one really does not need the special prepared paper, used in some forms of meters, in order to test the actinic value of a given light. For example, a piece of Solio paper, exposed under a small star or diamond-shaped hole cut in the corner of a memorandum book cover, will show a faint outline of the opening, in strong light during the middle of the day in June and July, in practically one-fourth second. This can be used as a standard and when working late in the day, in winter, under overcast sky, or indoors, the increased exposure needed to produce the faint star outline on the Solio paper under the memorandum book cover will show just how much less actinic the light is under one or more of these, or other, factors tending to decrease the actinic value of the light. If it takes two seconds to get the star outline just faintly visible, the light has just one-eighth the actinic value of sunlight at noon in mid-summer and an eight times longer exposure is required. The apparent or illuminating power of the light may seem to be such as to suggest only a doubling of the exposure, but the testing of the light as described will be found a most accurate guide. This is really the foundation of the Steadman system and we have mentioned it here as the most simple way of explaining the relationship between actinic value and length of exposure, as this last is what our correspondents wish to have made clear.

Exhausted Fixing Bath

Another Illinois subscriber wants to know how he can tell when his fixing bath has become too weak, by means of a hydrometer; or rather, he wants to know what will be the hydrometer reading for a bath that has become too weak. There is really no connection between the fixing strength of his used bath and the readings on a hydrometer. Aside from the alum and acetic acid the bath perhaps contains, fixing plates or paper

therein adds silver thereto, so that the density is not a measure of the hypo content. In addition, the hydrometer known to the photographic trade, was originally made to indicate grains of silver per ounce of solution, and is not a true density measuring instrument. Our correspondent can understand from this that there could hardly be any method of determining the fixing value of any used bath by means of this hydrometer, although the hydrometer could be used to determine the strength of a fresh bath, and is so frequently employed. The procedure for the latter is as follows: Make up a plain fixing bath of a definite desired strength, allow it to come to a convenient temperature (it will be quite cold when first mixed up), and then test it with the hydrometer. The reading secured will be the proper one to use in making up any future plain fixing bath of the same convenient temperature. For example, one can keep his hypo dissolved in a more or less strong or concentrated solution and make up a fresh bath very quickly by simply adding water to a portion of this stock solution until the determined hydrometer reading is recorded. Then the hardener can be added, if required, and the fixing bath is at once available without waiting for the hypo to dissolve or for the solution to fall in temperature to correspond with the developer and wash water being used; fresh mixed solution, as we have explained, being quite cold.

Forms of Sodium Sulphite

An Illinois correspondent asks us concerning the strength of the two forms of sodium sulphite and sodium carbonate, anhydrous and crystals. A good quality of the anhydrous is practically twice as strong as a good quality of the crystals, but of course different samples of both forms vary not a little in their purity. In sodium carbonate we have three forms, the anhydrous, the crystals and the granular, the latter being perhaps the most dependable for the reason that the anhydrous takes up moisture in a damp atmosphere and the crystals tend to become anhydrous in a dry atmosphere. There is practically little or no question as to the purity of the carbonates offered, but their strength may vary according to the amount of moisture content. In normal condition, the granular is twice as strong, and the anhydrous somewhat more than twice as strong as the crystals. That known as monohydrated or pure photographic granular is no doubt the most dependable, as long as it is not allowed to become exposed to the action of the air enough to change its water content.

Dissolving Metol

An Oregon reader complains that in mixing up his pyro-metol developer there is sometimes an undissolved sediment that no amount of shaking will dissolve. This is, no doubt, due to his failure to entirely dissolve the metol before adding the sodium sulphite, a common mistake with those making up a metol developer. If the metol is not completely dissolved or taken up by the water before the sulphite is added, a precipitate is quite likely to form, and once the sulphite is added, this precipitate will not dissolve.

"My Scars of Battle"

Some years ago we published, as a part of an article by one of our contributors, a few lines of verse, containing the above words. A New York correspondent asks us to repeat them or give him the source. The stanzas in question read as follows:

TO A PHOTOGRAPHER

I have known joy and woe and toil and fight;
I have lived largely, I have dreamed and planned,
And Time, the Sculptor, with a master hand,
Upon my face has wrought for all men's sight
The lines and seams of Life, of growth and blight,
Of struggle and of service and command,
And now you show me this—this waxen bland
And placid—unlined, untroubled white!

This is not I—this fatuous face you show
Retouched and prettified and smoothed to please.
Put back the wrinkles and the lines I know,
I have spent blood and brain achieving these;
Out of the pain, the sorrow and the wrack,
These are my scars of battle—
Put them back! BERTON BRALEY.

The above was originally published in *Harper's Weekly*, about six or seven years ago; and, I believe, was not as fully appreciated as it should have been, by the photographers.

OUR BOOK SHELVES

"The Photographic Researches of Hurter & Driffield"

This is no doubt the most notable photographic book published since Hunt's "Researches on Light" in 1844. It has been gotten out by the Royal Photographic Society of London, and has received the highest praise from the British press. The society has appointed Tennant & Ward, 103 Park Avenue, New York, selling agents for this country and a supply is expected by the time this reaches our readers' eyes. The price will be nine dollars, postpaid. A more extended mention will be made as a copy becomes available for examination.

"Motion Picture Photography"

The full title "Condensed Course in Motion Picture Photography" suggests more fully the wide scope of this handsome volume, edited by the well known authority on the subject, Carl Louis Gregory, F.R.P.S., formerly chief instructor in Cinematograph Signal Corps School. Chapters by Charles Wilbur Hoffman, formerly with Pathe, Edison, Thanhouser and the like, and others by specialists of the research laboratories of the Eastman Company, add to the value of the book. In fact, the editor acknowledges not a few most authoritive sources of information, all going to show that no pains has been spared to make the work as exhaustive as possible along the lines of practical instruction. A wealth of illustrations are provided, and as the work is just off the press, the reader can be assured that the best and latest information is presented; or rather, that the very full and complete information that is given on every phase of the subject is not old or obsolete. We should, however, qualify our description of the book by explaining that natural color work, photomicrography with the motion picture camera and a few special subjects of that nature are not touched upon for the simple reason that to do them all justice would be out of the question in one volume, and to do them less than justice would mean to slight or reduce the space devoted to the fundamentals of regular motion picture work. Educational and industrial work, animated cartoons, trick work, double exposures, submarine and airplane photography, are all covered. Published by the New York Institute of Photography, 141 West Thirty-sixth street, New York.

"Photography and Its Applications"

This is a neat little cloth bound book of some one hundred and twenty-five pages, the text by William Gamble, F.R.P.S., and the cuts from various sources. The history of photography and its various applications are treated in a full, yet concise form, giving the reader, unacquainted with the subject, a quite general survey of the field covered. The book is one of the series entitled "Common Commodities and Industries," originating in England, and obtainable from Isaac Pitman and Sons, 2 West Forty-fifth Street, New York. Price one dollar, postpaid.

"Practical Studio Advertising"

About the best two dollars' worth of good advertising ideas that we have ever had the pleasure of seeing. Any professional photographer who has in mind the spending of even only a few dollars in the most modest amount of advertising will add many dollars to the value of such publicity by acting upon the advice and using the ideas furnished by this compilation. Striking and attractive advertisements in generous number, letters to be sent out to present and prospective customers, business cards, circulars, booklets, even collection letters, are all shown in the best and most attractive forms. Merely as a saver of time, thought and trouble, this compendium is worth many times its cost. Send two dollars and get a copy, addressing: Abel Publication Company, Caxton Building, Cleveland, Ohio.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

New Members

4749—J. T. Gilseth, Box 25, Pine Creek, Minn.
3¼x4¼. Class 3.

4750—Morton W. Elliott, Dillon, Mont.
3x5, 8x10 and enlargements, on developing paper. I desire no exchange at present, as I am just starting in business. Class 1.

4751—C. H. Foster, Box 92, Kerrwood, Ont., Canada.
5x7, on developing paper, of Ontario views and portrait work to a limited extent; for general views and figure poses. Class 1.

4752—Walter Henry, 215 N. Main St., Butter, Mo.
Exchange notice later.

4753—John J. O'Doran, 2147 Richmond Terrace, Port Richmond, Staten Island, N. Y.
Exchange landscapes only.

4754—Louis Kuno, Box 63, Hemlock, Ohio.
3¼x5½ and 3¼x4¼, on developing paper, of scenery, landscapes, buildings and portraits, of any kind, of interest. Class 1.

4755—A. C. Yuill, East Moline, Ill.
Class 3.

4756—J. William Hazelton, Box 196, Charleston, W. Va.
Class 2.

4757—Gunder Omland, McIntosh, Minn.
Class 2.

4758—H. B. Romane, 708 Willamette St., Eugene, Ore.
5x7 or smaller, on developing paper (no glossy), of Oregon views, marine landscapes etc., for other marines, landscapes and views in general. Desire to exchange only 5x7 or 3¼x5½ prints; no post cards. Class 1.

4759—George E. Arms, 136 Riverside, Owatonna, Minn.
2¼x3¼ and 4x5, on developing paper, of everything under the Southern Minnesota sun; for scenery from different parts of the United States. Desire to exchange only post cards. Class 2.

4760—H. B. Rood, Church St., Granville, N. Y.
Class 2.

4761—W. S. Turner, 3006 Landis St., Pittsburgh, Pa.
All sizes, on developing paper, of marines, landscapes, old mills, bathing girls, etc., also lantern slides; for same class of subjects. All photographs to be sent by first class mail. Class 1.

4762—Count G. De Miro, 3706 Delmar Blvd., St. Louis, Mo.
Class 3

4763—George A. Smith, 1677 Palmwood Ave., Toledo, Ohio.
Class 3.

4764—David Forrest, Box 25, Willits, Calif.
3¼x5½, on developing paper, of water scenes, landscapes and portraits. Class 3.

4765—Charles A. Ehren, 18 Hill St., Mechanicsville, N. Y.
3¼x5½, on developing paper, of landscapes and post card views; for all kinds of subjects. Class 2.

4766—U. A. Donafi, Santa Fe, N. M.
2¼x3¼ to 8x10, of Indian studies, Indian pueblos, art, portraits; for night pictures and draped and undraped figure studies. Class 1.

4767—Hartley L. Emerson, 315 Pool St., Biddeford, Me.
5x7 and smaller, on developing paper, of pretty girls, river scenes and historical subjects, for the same and mountain views. Class 1.

4768—N. V. Virkar, Girgaon Road, Bombay, City, India.
6½x8½, and post cards, on developing paper, of landscapes, seascapes, portraits, etc.; for subjects of general interest. Class 1.

4769—Edward A. Mueller, Jr., Box 20, Newark, N. J.
Any size up to 6½x8½, on all kinds of paper, of Indians, horses, dogs, lions, views and pictures of general interest; for figure studies and anything of interest, not mounted. Must be first class work.

4770—Andrew Petos, Box 42, Windsor, Vt.
2½x4¼, on developing paper, of scenery, etc.

4771—George W. Nichols, 179 Madison St., Chicago, Ill.
Class 3.

4772—Will R. Kubley, Argos, Ind.
Class 3.

4773—Charles E. Fisher, Box 426, Taunton, Mass.
3¼x5½, on developing paper, of locomotive and train; for the same class of subjects. Class 1.

4774—Sanjiro Kaneko, care Suduki & Co., Wakamatsu, Fukuokaken, Japan.
2¼x3¼, 3¼x5½, and 4¼x6¼, on developing paper; for all kinds of photographs. Class 1.

4775—Edward M. Crumley, 145 Wilson St., Hartford, Conn.
3¼x5½ and enlargements on bromide and developing paper, of scenery, marine views, and fancy poses of children; for same and landscapes. Class 1.

4776—G. Dempsey, B. & B. Dept., C. N. Ry., Saskatoon, Sask., Canada.
3¼x5½, 5x7 and 3½x12, on self-toning and developing paper, of landscapes and miscellaneous subjects; for landscapes. Exchange only post cards. Class 2.

RENEWALS

1172—R. Weaser, 533 West St., Bloomsburg, Pa.
3¼x5½, 5x7 and 8x10, on printing-out and developing paper, of landscapes; 5x7 stereoscopic views of mountains, rivers, lakes and snow scenes. Exchange anything good. Only good work sent and received. Desire to exchange only post cards and 5x7 stereos. Class 2.

2095—G. G. Stortz, 2424 Germantown Ave., Philadelphia, Pa.
3¼x5½, on printing-out paper, of historical views in and around Philadelphia; for all kinds of views; no portraits. Want prints only. Class 3 for present.

2533X—Wilmer Winston, care Union & Planters Bank & Trust Company, Memphis, Tenn.
Class 3 for present.

3329—George R. Bunn, 1571 W. First St., Los Angeles, Calif.
Class 3 for present.

4090—John W. Cook, Kingsburg, Calif.
Class 3 for present.

4132—C. S. Carlsmith, Hilo, Hawaii, T. H.
Class 3 for present.

4236—Tom Rocamp, Asheville, Man., Canada.
Class 3 for present.

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

The Eastman School of Professional Photography has come and gone. Many visitors from the interior of the state attended.

A. C. Henline and family of Klamath Falls, Oregon, motored to San Francisco and remained about two weeks.

Stanton Rowell of Grants Pass, Oregon, was a visitor in San Francisco recently.

Geo. A. Dolan of Probus fame has returned from three weeks sojourn in Mendocino County. Caught many fish, so he says.

Roscoe Perkins of Honolulu called on the writer while in San Francisco.

L. M. Powell of Hanford and J. A. G. Brown of Fresno attended the Eastman school.

H. A. Parker of Pasadena, California, and the writer will motor through Lake County and to the south for a few weeks during August.

Scott Snowden of Modesto visited the city recently.

W. S. Valentine of Redding was in San Francisco for the Eastman school.

C. R. Mandeville, formerly of the Palace Hotel Studio, is now located at 220 Post Street, San Francisco.

Victor Flash Cabinet Popular

Fred Hartsook, a popular photographer of this city, who controls and operates a number of studios throughout the state, has recently placed an order for an additional seven Victor flash cabinets for some of the studios, increasing his present supply which numbers eleven. It is obvious that Mr. Hartsook would not be purchasing a further supply of these cabinets were they not found perfectly satisfactory. Photographers interested in a practical method of making themselves independent of unfavorable light, or have inconvenient situations, will do well to investigate the merits of the Victor flash cabinet as manufactured by James H. Smith & Sons Company, 3541 Cottage Avenue, Chicago, Illinois.

"Pictorial Composition In Photography"

In this work, the author, Arthur Hammond, associate editor of *American Photography,* gives the reader much that is instructive concerning the many phases having to do with the production of pictorial work by photography. There are nearly fifty full page reproductions of the author's best pictures, used as illustrations, and these are real illustrations, being used to point out or make clear the meaning of suggestions and instructions given in the text. Chapters are devoted to spacing, mass, linear perspective, simplicity, line composition, tones in portraiture, art requirements and pictorial technique. Such practical subjects as outdoor portraiture, night photography, bromide enlarging, retouching and the like, are all covered by informative discussion based on the author's own work and experience. All in all, the book is one that should be studied by every photographer interested in the pictorial possibilities of the camera, particularly the one who desires information that is practical and concrete, not theoretical and abstract. Published by American Photographic Publishing Company, 17 Columbus Avenue, Boston, Massachusetts. Price three dollars and fifty cents.

The New Verito Lens

During the past ten years the Wollensak Optical Company of Rochester, New York, has done much to popularize soft-focus photography. In making their Verito, Diffused-Focus, f-4 lens, and by encouraging and instructing the photographic profession in its correct usage, they have established, in the minds of the general public, a genuine appreciation of the quality of image rendered by the soft-focus type of lens.

The advantages of the old Verito lens are already well known. Its convertibility, with a rear focal length of about half again as long as the doublet; its high speed of f-4; its great reduction in the amount of retouching necessary; its suitability for Graflex or

studio use, or for enlarging where soft-focus effects are desirable; were all appreciated by the progressive photographers.

Despite its popularity, the experimental department of the Wollensak Company has been constantly on the alert for any possible improvement, with the result that a new Verito has been developed, one having all of the characteristic good qualities of the old lens, but so improved as to practically eliminate the slight halation that was sometimes apparent. Furthermore, this new lens gives a softness at f-4 that is about equal to that given by the old lens at f-6. The result is that the professional and the advanced amateur using the soft-focus type of lens can employ this new objective at its widest opening without obtaining a displeasing fuzziness. The new construction makes possible high speed exposures with no danger of double line, halo or mushy appearance. Unlike other soft-focus lenses, the new Verito gives the same image on the ground-glass that it does in the finished negative.

In enlarging with the new Verito, it is unnecessary to use diffusing stops, as with the old form. The construction is such that a beautiful degree of softness is obtained without the stops, and the diffusion can be varied to suit the preference of the user by simply using f-8, f-9.5 and f-10 in place of the old diffusing stops that were numbered 1, 2 and 3. Doing away with the old stops means that exposure is more than four times as rapid. An inquiry addressed to the Wollensak Optical Company, Rochester, New York, will bring full particulars.

Greatly Increased Business

Since control of the Cooper Hewitt Electric Company, Hoboken, New Jersey, was assumed last June by the General Electric Company, new business of the company has more than doubled. The plant has been running to capacity and working overtime in an effort to catch up with orders. In order to meet the increased demand for industrial lighting outfits, as well as motion picture apparatus, the Cooper Hewitt Electric Company has recently purchased some adjoining property. This will eventually give more than double the present floor space. Rapid strides have been made in the improvement and development of the Cooper Hewitt lamp, chief among which is the standardization of the new eighty-five per cent power factor outfit. Some radical improvements are under way which will materially increase the efficiency of this lamp. The engineering and sales department have been materially increased by the acquisition of new men.

In Their Own Building

The Bulletin of Photography and *The Camera,* will, in the future, be issued from their own building, located at 636 Franklin Square, Philadelphia. With his own printing office located in his own building, the publisher, Frank V. Chambers, is to be congratulated upon the enviable position enjoyed by his two excellent photographic magazines. *The Bulletin of Photography* is published weekly, dealing almost exclusively with professional topics, while *The Camera,* published monthly, concerns itself with subjects of interest to amateurs and the more general photographic field.

Illinois College of Photography

President L. H. Bissell has the honor of being a charter member of the Rotary Club, recently organized in Effingham. The organization will be a great help as a "Booster Committee" for the city, and needless to say, Mr. Bissell will be among the most energetic.

Percy C. Raymer of Detroit, Michigan, is now one of the College Faculty as instructor in the etching department. Mr. Raymer is a photo-engraver of considerable experience, and comes highly recommended.

Some new equipment has been added recently for the operating department: a large Hadaway Double Arc lamp for artificial lighting, and a studio mirror; while the printing department has come in for its share with a heater for sepia work, an automatic print washer, and an embosser.

The Bissell Colleges are now enjoying the largest attendance in the history of the institution. The enrollment for the month of January alone was fifty-two, which is not so bad for a single month. At that rate, 1920 should be a record year.

Amateur Prints Wanted

Ten dollars for the best photographic print, unmounted, of a current big news event taken by an amateur photographer, and two dollars each for any prints used, with the return of any not used if postage is sent is offered by the *Mid-Week Pictorial,* 1708 Times Building, New York.

CAMERA WANTS

Advertisements of the nature shown below will be inserted under this heading at the rate of fifty cents each insertion, for twenty-five words or less; each additional word, two cents extra, cash with order. Those of positions wanted inserted once free. No regular business advertisements accepted.

Hereafter, in counting words, such groups of letters, figures, or figures and letters as B. & L., $300.00, 8x10, 10½-in., f-4.5, Ser. III, No. 3, 3A, and the like, may be considered as one word. The advertiser's own or firm name can be counted as two, and any reasonable address as five words, except as the actual number of words in the latter may be less. These advertisements **MUST BE PREPAID**, and if any excess is sent, it will be returned with our acknowledgment of the order. Advertisements reaching us later than the eighteenth must be held over until the next following month.

BOOKS Photographic books and magazines of all kinds bought and sold. Back issues of many magazines on hand. List sent for stamp. Please state needs, as supply on hand is continually changing. Harry A. Brodine, 777 Forest Ave., Bronx, New York.

WANTED Negatives of Yosemite Valley. Will buy scenic negatives of all kinds. Address D. E. A., care Camera Craft, San Francisco, Cal.

FOR SALE Studio doing better than $1000.00 per month, at Sacramento, Cal. Address S. A. C., care Camera Craft, San Francisco, Cal.

EXCHANGE Have you a picture that's odd, funny or a freak? I have and will exchange with you. Any size up to 6x8. Cobb X. Shinn, Liberty Bldg., Indianapolis, Ind.

RETOUCHING Correctly handled by an expert. Color specialist in portraiture and landscape. Emerson Beers, Room 119 Callaghan Bldg., 1112 Market St., San Francisco, Calif.

FOR SALE 5x7 Press Graflex with 5x8 B. & L. Ser. Ic Tessar lens, Graflex magazine plateholder, Model A. All as new; price $200.00. The Mathews Co., Port Clinton, Ohio.

TAHITI L. Gauthier, the leading photographer, retiring after 15 prosperous years, offers his studio, business and private home for sale. Largest and best equipped curio shop attached to the studio, together with a very prosperous jewelry department; also garden, auto garage, etc. Rare opportunity. Great future. Can clear $4000.00 with studio alone. Price wanted $5000.00 cash and $2000.00 on terms. For more particulars write to Camera Craft or L. Gauthier, Papeete, Tahiti.

FOR SALE Ernemann Focal Plane Camera, 3¼ x4¼, Suter f-6.8 Anastigmat in focusing mount, film pack adapter and case. Focal plane shutters need fixing, sell $25.00. Voigtlander Collinear f-5.6 in Volute, 3¼x4¼, $30.00. Voigtlander Radio, f-6.8, 3¼x4¼, in Compound shutter, $25.00. Goerz Syntor, f-6.8, in Auto Shutter, $17.00. 3¼x4¼ Sylvan, f-6.8, 6-in. focus in Compound, $27.00. Wirlpool print washer, 24-in., $6.00. Seneca Cameras, side swing and sliding partitions; one 6½x8½, case, 11 plateholders, $30.00; one 8x10, case, 5x7 extra back, 12 plateholders, $35.00; one 11x14, 3 plateholders, $40.00. All have Voigtlander Collinear Anastigmat lenses and extra lens boards and flanges. Two film numbering machines; perforates numbers like Ansco film, $6.00 and $7.00. Folmer & Schwing vignetter, $6.00. 12x 42 printing frame, extra heavy, and glass, $6.00. Adams & Bagnal 15-amp. arc lamp and controller, about 20 imported carbons, 20-ft. stage cable, $25.00. Ingento changing bag, $2.50. Schoberg Home Portrait Outfit, film pack adapter; new condition. $140.00. U. A. Donati, Santa Fe, New Mexico.

FOR SALE or Exchange: Combination back and 3 plateholders for 3A; 5-in. film tank, less cup and apron; 2½-in. film tank complete, less cover; several complete volumes "American Photography", "Photo Era", "Camera Craft", "Abel's Weekly", Amateur Photographer's Weekly", "The Camera"; also several photographic books and 10 vols. "Lock and Key Library". Will sell or exchange for anything reasonable. Want flash bag or lamp, or figure studies. W. A. Gillespie, Stamps, Ark.

FOR SALE Latest model 6½x8½ view camera; like new; 2 double holders and tripod; $20.00. Bingham's Studio, Rogers, Ark.

FOR SALE B. & L. high power telephoto attachment No. 4; never used. A bargain at $35.00; sells at $52.00. Also 11x14 B. & L. Tessar, f-4.5; never used. Will take $250.00 cash. F. M. Irving, 927 Harrison St., Kansas City, Mo.

FOR SALE 5x7 Speed Graphic, 6 plateholders, film-pack adapter. A-1 condition, $75.00. H. V. Keeler, Box 292, Hugo, Colo.

FOR SALE 2¼x3¼ Ica Roll Film Camera, original Carl Zeiss Tessar f-4.5 lens, 10½-cm. focus, Compur shutter. J. P. Sanderson, 208 Chamber of Commerce, Denver, Colo.

FOR SALE or Trade—5x7 view camera and 8x10 portrait lens. Will take field glass or adding machine in exchange. G. G. Bruckert, Bruning, Neb.

FOR SALE New No. 8 Premo with f-7.7 anastigmat lens in Kodak Ball Bearing shutter and rising front. In excellent condition. Complete with carrying case, film pack adapter, plateholder, portrait and copying lens; $22.50. H. J. Hite, 521 Ohio, Terre Haute, Ind.

FOR SALE 5x7 Press Graflex camera, fitted with 5x8 B. & L. Zeiss Tessar IC f-4.5 lens; practically new; price $150.00. Williamson's Photo Shop, Box 185, Demopolis, Ala.

FOR SALE or Trade—Anastigmat lenses, Busch Omnar, f-5.5, 10-in. focus, Automatic shutter. Turner-Reich, Ser. II, f-6.8, 7½-in. focus, Acme shutter. Cooke, Ser. II, f-4.5, 7-in. focus, Optimo shutter. Voigtlander Euryscope, f-7, 11½-in. focus, Studio shutter, Mentor Reflex,4x5 camera, holders and adapter; Newman & Guardia Reflex, 3¼x4¼, Carl Zeiss Protar VIIa lens, case and slides; best Reflex made. 4A Kodak with speed equipment. Pony Premo No. 7, case and holders. Write for particulars. A. C. Barber, State House, Salem, Ore

FOR SALE East Bay studio, two blocks from 23rd Ave. station. Full equipment, good light; rent $16.00; water free. Oliver P. Stephenson, 1409 23rd Ave., Oakland, Calif.

FOR SALE Auto Graflex 4x5, 5x7 Zeiss Tessar IC, f-4.5 lens, adapter, plateholders, magazine, etc. No. 8, 4x5, Seneca camera with anastigmat lens, f-6.3, and complete outfit. Both are new and will sell both or either cheap. Liberty bonds accepted. Jas. G. Clark, Box 81, Sedalia, Mo.

FOR SALE Ground floor studio, large show windows, complete equipment, doing excellent business, $3000.00 cash. Owner leaving city. Splendid opportunity for good photographer. Address Photo Studio, 1429 Polk St., San Francisco, Calif.

G. E. BIDDELL & CO. CAMER

CAMERA WANTS—Continued.

FOR SALE Well equipped studio in growing town of 8000. Excellent field for photography. Address De Luxe Studio, Box 568, Sand Springs, Okla.

FOR SALE No. 1 Special Kodak, B. & L. Tessar, IC, f-4.5 lens, Optimo shutter; like new; $60.00. J. R. Searle, Townsend Apts., 11th and Oak Sts., Oakland, Calif.

FOR SALE No. 0 Graphic camera; like new; guaranteed first class condition. Bargain; no trade accepted. C. A. Faille, Laguna Beach, Calif.

FOR SALE Fixtures and fittings of the largest, longest established studio in the city of Butte. A fine proposition will be given a photographer wishing to locate in territory fast regaining the normal conditions. Address Elite Studio, Butte, Mont.

FOR SALE 8x10 Seneca, R. R. lens, new bellows, 5 holders, $25.00. Old style 5x7 camera, lens and tripod, $7.50. Stand scales, 1 grain to 3 ounces, $4.50. Ray filters and miscellaneous photo articles cheap. Also S. & W. 38 revolver. H. Gunther, 2914 35th St., Sacramento, Calif.

FOR SALE Voigtlander Alpine, 3¼x4¼ Colinear f-6.8 lens, Compound shutter, 12 holders, film pack adapter, ray filter, case, tripod, film pack and plate developing tanks. Finest outfit obtainable; like new; absolutely guaranteed; $75.00 cash; no trade. L. O. Christensen, Castle Rock, Colo.

FOR SALE Ground floor studio in town of 7000, the "hub" of the famous Willamette Valley; good brick building; 2 dark-rooms. Pleasantly situated. Price $600.00, which is less than inventory. The Haskin Studio, Albany, Ore.

FOR SALE Photo studio doing fine business. Good town north of San Francisco; selling account of sickness. Address S. M., care Camera Craft, San Francisco, Calif.

FOR SALE Verito 14½-in. in Studio shutter; cost $75.00, $50.00; Verito, 7-in., in barrel, cost $35.00, $25.00; Newark Reflex, no lens, 6 Graphic holders with case, cost $160.00, $75.00. A. E. Davies, 1327 Grove St., Berkeley, Calif.

FOR SALE Leading studio, most central location; strictly first class. Best work, good prices. Big Camp Lewis trade. Duplicate orders more than rent. Selling account outside business. Good workman, if honest, can pay $50.00 month for it at half value, $2000.00. Let studio pay. O. R. Scott, Tacoma, Wash.

FOR SALE Well equipped studio, at once, on account of my husband's death. Good location, good business. Write or call for particulars. Mrs. Alfred Lorenz, Multnomah Studio, 801 DeKum Bldg., Portland, Ore.

FOR SALE 6½x8½ Cycle Graphic with Cirkut attachment. Only used three times. Cost $246.00; will take $185.00. A. Kastner, 313 N. Los Angeles St., Los Angeles, Calif.

FOR SALE 3A Ica Film camera, f-6.8 Hekla Double Anastigmat lens, Compound shutter, rising, falling and sliding front. Leather carrying case, fine outfit; like new; $45.00 Walter Wolf, 1456 N. Pierce St., Milwaukee, Wis.

FOR SALE Old established ground floor, one man studio in thriving and rapidly growing manufacturing agricultural center of 50,000 inhabitants. For further particulars, address F. H. Hanson, 214 S. San Joaquin St., Stockton, Calif.

FOR SALE 1A Special, range finder, Zeiss IIB, f-6.3 lens, Optimo shutter; new condition, $80.00, or exchange for 3A similarly equipped. O. P. Sanders, Riverside, Calif.

FOR SALE Williams Motion Picture camera, including tripod, 3 magazines, Voigtlander Heliar lens and carrying case; perfect condition. Price complete, $175.00. M. H. Whitelaw, 145 W. 45th St., New York, N. Y.

FOR SALE 1⅝x2½ No. 0 Graphic camera with case, $35.00. Want Graflex. 3¼x4¼ plateholders. H. T. Newcomb, 831 Elm St., Woonsocket, R. I.

FOR SALE Small studio; clean, live town, heart Sacramento Valley; only studio and doing good business. Must sell before August 1st; $700.00 will swing deal. Studio fully equipped and with Ansco agency including few new Ansco cameras. Address Box 14, Spring Garden, Calif.

FOR SALE 5x7 Pony Premo camera fitted with anastigmat lens, Auto shutter, 5 plateholders, tripod and case; slightly used, $17.50. 3A Autographic Kodak, f-7.7 anastigmat lens, Ilex Universal shutter, extra plate attachment, one plateholder, plush lined case; all like new; $33.50. 2C Ansco Jr., f-7.5 Anastigmat lens; Bionic shutter, solid leather case, practically new, $19.00. No. 2 Folding Brownie, single lens, case, good condition, $5.00. F. P. Raab, Box 53, Moulton, Tex.

FOR SALE Kodak, 3¼x4¼, f-6.3, IIB Tessar lens in Compound shutter, carrying case, tripod, 3½-in. film tank, scales and weights, adjustable filter holder and filter, portrait attachment, exposure meter; also enlarging outfit and 3 12x14 trays; $75.00 cash. J. Chambers, 1510 E. 14th St., Oakland, Calif.

FOR SALE 4x5Goerz Ango camera, Dagor f-6.8 lens, focal plane shutter, film pack adapter, 3 double plateholders, extra extension for use with rear combination of lens for long distance views, carrying case for camera and film pack adapter; outfit like new; sell for $90.00. Lawrence M. Feirer, 21 West Morton St., St. Paul, Minn.

FOR SALE No. 5 Century camera fitted with Wollensak Vesta f-5 lens, 10-in. focus; outfit as new; sell for $45.00; camera only $30.00. 5x7 new Eastman Mounting Press, $15.00. Atom camera with f-6.3 lens, using Premo Pack No. 300, perfect condition, $20.00. McKay Art Co., Missoula, Mont.

WANTED Film camera, 1⅝x2½, fast shutter and lens; also Graflex or Speed Graphic, small size with f-4.5 lens, roll holder and case. No junk. Address Box 975, Douglas, Ariz.

WANTED 5A Dallmeyer portrait lens. State condition and price. Ralph J. Golsen, 1128 Argyle St., Chicago, Ill.

WANTED Photographer. To the right party will make an attractive proposition to take charge of the portrait end of my business at a guaranteed salary and commission. Do not reply unless you are capable of taking charge and a first class workman. Parish & Smith, Camp Lewis, Wash.

WANTED Business partner in the photographing of children. Knowledge of business not necessary. Middle aged woman preferred. Address Dad Aitken, 184 S. First St., San Jose, Calif.

WANTED Good kodak finisher and dark-room man. Steady work. Must be ready to leave if wired for. State ability and experience in first letter. Address Photographer, Box 1647, Anchorage, Alaska.

WANTED Competent, personable lady photographer, under 45, to run studio near San Francisco on percentage basis. References exchanged. Address G. G., care Camera Craft, San Francisco, Calif.

WANTED No. 0 Graphic and 3A Special Kodak with Anastigmat lenses. Must be late models and have good appearance. Stanley Thomensen, 1223 S. Ainsworth Ave., Tacoma, Wash.

WANTED Negatives of bathing girls and draped and undraped figure studies. Send proofs and prices. All proofs returned. Waterman, 142 Fulton St., New York.

WANTED By reliable established photo dealer, negatives of bathing or gymnasium girls. Send proofs and prices to The Cosmo- each for any prints used, with the return of any not used if postage is sent is offered by the *Mid-Week Pictorial*, 1708 Times Building, New York.

CAMERA WANTS—Continued.

WANTED R. B. Auto Graflex or R. B. Graflex, 3¼x4¼ or smaller, with or without lens. Will trade new No. 3 Eastman Special or 5x7 Pony Premo, with part cash. Mrs. Smith Matson, 912 N. Shartee St., Oklahoma City, Okla.

WANTED Original negatives of draped and undraped figure studies. Send proofs and prices to Box 296, Baltimore, Md.

WANTED Kodak finishing studio, or studio with a large kodak trade, located in California, Oregon or Washington. L. L. Hatlett, Fairfield, Ill.

WANTED 16-in. Cirkut camera. Must be in first class condition. W. R. Wallace, 415 17th St., Denver, Colo.

WANTED 8x10 Premo View, 3¼x4¼ or 4x5 Sanderson de Luxe finished in teakwood. Must be as good as new. Henry Fuermann, 104 S. Michigan Ave., Chicago, Ill.

FOR EXCHANGE 12x17 cm. Lancaster (English) camera with tripod and holders, for set of 9 or 10-in. condensers. J. Miller, 9303 Olive, Oakland, Calif.

SALE-EXCHANGE 5x7 Ser. V Korona, with 8½-in. Sylvar f-6.8 lens in Acme shutter, extra wide angle lens, wide angle bed, 6 holders, film pack adapter, leather carrying case; perfect condition. Want 6½x8½ Cycle Graphic without lens. F. H. Maybury, 2627 Ursuline Ave., New Orleans, La.

FOR QUICK Sale. The Eddy Studio at Payette, Idaho. Good territory to draw from. No competition. Price right if taken at once. Mrs. J. V. Potter, Payette, Idaho.

MUST SELL At once, new established amateur kodak finishing business. Reason, employed in railroad service and cannot attend to both at once. Good opening for a man working up post card business; town 6000; well located; ground floor; rent reasonable; $600.00 stock; all new and all apparatus for handling a large amount of work; $800.00; $400.00 down, balance on easy terms. Address H. A. F., 386 North Front St., Marshfield, Ore.

BARGAIN Beseler Stereopticon, 600-watt lamp, complete, $25.00 cash, or exchange for Halldorsen Flash lamp, 8x10 plateholders, etc. Fred C. Gorham, 1203½ Court St., Saginaw, Mich.

PARTNER Wanted. Lady wants partner to buy half interest in studio, one who understands portrait and commercial work; also has business ability. Good proposition. For particulars address F. N. D., care Camera Craft, San Francisco, Calif.

A SNAP 3A Filmplate Premo, equipped with Voigtlander Dynar f-6 lens in Compound shutter, adapter; new. C. W. Maddox, Box 64, Butler, Mo.

REAL Opportunity. Ideal county seat studio; finely equipped; modern, metal frame, prism glass, north skylight. A going concern, established 8 years; no real competition; immense territory to draw from. Possibilities limited only by ability and capacity of operator. Guaranteed investment for $1500.00, original cost of establishing. Owner retiring. Address Photographer, Eversole Bldg., Ukiah, Calif.

FOR SALE 6½x8½ Century View No. 2, complete with 6½x8½ Rapid Convertible lens in Auto shutter, 6 plateholders, extra 5x7 back, tripod, carrying case; all in new condition. Best offer takes outfit. F. H. Maybury, 2627 Ursuline Ave., New Orleans, La.

FOR SALE 4x5 Telescopic R. B. Graflex and case, 5 extra holders and case, film pack adapter; new condition. $140.00. U. A. Donati, Santa Fe, New Mexico.

FOR SALE 6½x8½ Goerz Celor lens, f-5, 9½-in. focus; perfect condition, $75.00. R. E. Price, Claypool, Ariz.

FOR SALE Conley Three-Focus Anastigmat, 6½x8½, f-4.5, Optimo shutter; fine condition, $80.00. Hard rubber composition fixing box, holds 10 6½x8½ or 20 5x7 negatives, new, $5.00. St. Louis Baby Poser, special patent, good condition, $5.00. Jesse L. Blickenstaff, North Manchester, Ind.

WHO HAS 3¼x4¼ R. B. Telescopic Graflex with anastigmat equipment to exchange for 5x7 Criterion Home Portrait outfit, anastigmat lens, special model, complete, case and 7 holders. O. F. Smith, 122 S. Milton St., Whittier, Calif.

WORKING Partner wanted in a growing home portraiture business in good Pennsylvania town. Want man or woman who will take interest in doing good work. Address Home, care Camera Craft, San Francisco, Calif.

WANTED Experienced man for amateur finishing department. Prefer one that can use a Paco printer. Permanent position with good salary for reliable man. The Moen Studio, La Crosse, Wis.

WANTED Adams Minex, Model A, or Tropical Model Reflecting camera. Charles Thomas, Greensburg, Kansas.

WANTED 5x7 Graflex. R. B. 5x7 Graphic with or without lens. Amateur equipment, any kind. Will sell flash machine, tripods, Kodaks; write your wants. B. W. Johnson, Owatonna, Minn.

WANTED a 4½ or 5-in. imported Carl Zeiss lens in barrel. Address B. Macdonald, 801 Empire Bldg., Atlanta, Ga.

FOR SALE 1A Speed Kodak; first class condition. Overhauled by Kodak Co. and fitted with new Wollensak f-4.5 lens; $65.00. F. A. Ross, Two Harbors, Mich.

FOR SALE or Exchange: Brand new No. 9 Oliver Typewriter, 2-color ribbon, $35.00, or will exchange for good camera. Also correspondence course, Real Estate, Master Key System, and Physical Culture at very low figure or exchange. Address Graham, 2243 Fitzwater St., Philadelphia, Pa.

FOR SALE 5x7 Graflex, Goerz Dagor lens, 3 holders, very good condition; lists $189.10; sell for $107.00. Also 6½x8½ B. & L. Zeiss Ic Tessar, in barrel; like new, $105.00. Dr. Maclay Lyon, Suite 501 Bryant Bldg., Kansas City, Mo.

FOR SALE Columbia River Highway studio; established 15 years; good proposition. We must have a change. For particulars address Dietz, Photographer, Hood River, Ore.

SPOT CASH and highest prices for your camera or lens. Write brief description of what you have. We will make you a cash offer by return mail. If you wish, you may send your goods, subject to our offer, and if our offer is not satisfactory, we will prepay charges on your goods in returning them to you. **Bass Camera Co., 109 N. Dearborn St., Chicago, Ill.**

We will pay you the highest price for your camera or lens. Furnish us with the best description you possibly can and you will receive our trade or cash offer. If you prefer, you can send in your goods subject to our inspection and then, if our offer is unsatisfactory, we will return your goods charges prepaid. **Central Camera Co., 124 So. Wabash Ave., Chicago, Ill.**

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In 1888 when the above letters were first euphoniously assembled they meant nothing. To-day they mean protection for you in the purchase of photographic goods.

Arranged to spell "Kodak," they signify certain products of the Eastman Kodak Company, such as Kodak Cameras, Kodak Tripods and Kodak Film Tanks.

Kodak is our registered and common-law trade-mark and cannot be rightfully applied except to goods of our manufacture.

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it isn't a Kodak

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YOU can make pictures of YOU—with a

KODAK SELF-TIMER

Price, $1.25

YOU set this clever device and then take up your position in front of the lens. A second later—or even three minutes later, according to adjustment, the familiar "click" tells you that the exposure is made.

With a Kodak Self-Timer, not only are self-portraits possible but everybody can be in the group.

The cable release, the equipment on all the new model Folding Kodaks, is a necessary adjunct to the operation of the Timer. Older models regularly furnished with the Kodak Automatic Shutter, the Kodak Ball Bearing Shutter, the Compound Shutter or the Optimo Shutter may be equipped with the cable release at small cost.

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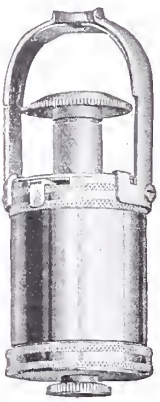
Get in the group yourself with a



KODAK SELF-TIMER

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COMPOSE the view and establish the focus—then the Kodak Self-Timer makes the picture.

The device is adjustable so that the time interval elapsing between the instant the Self-Timer is set and the "click" is long or short—as you like.

Plenty of time to rejoin the group—plenty of time to pose for a self-portrait.

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MONOMETHYL PAR-AMIDOPHENOL SULPHATE

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ELON

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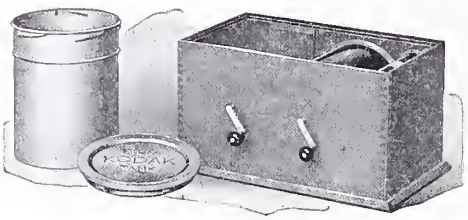


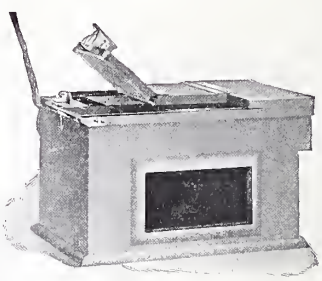
Kodak Film Tank

Price, $3.50 *up*

As far as developing goes, you are the equal of the expert—when you use the Kodak Film Tank. No dark room—develop your films where you are—when you will.

Kodak Amateur Printer

Price, $10.00



A photographic partner of the Film Tank is the Amateur Printer. An automatic masking device fits any amateur size negative, and each negative once in place is held in proper position for one print or a hundred.

In combination, the Kodak Film Tank and the Kodak Amateur Printer make every man his own finishing department.

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EVERY photographic formula specifies a definite temperature for every photographic solution—at this temperature and no other, will a solution do its best work.

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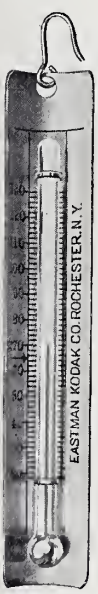

THE hook top and curved back make it particularly useful in connection with the Kodak Film Tank.

A good thermometer, however, for any photographic purpose.

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The hammer end will be found useful for crushing chemicals.

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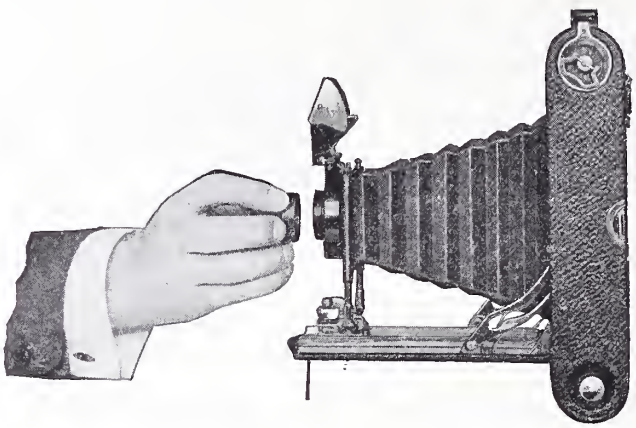

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It's called the Portrait Attachment, because it makes possible head and shoulder studies that fill the picture area. But that is not all it can do.

Close-ups of every description—pictures of flowers, for example, made at such close range that all the detail observed by careful inspection of the eye is reproduced in the print—come within the province of the Kodak Portrait Attachment.

It's just an extra lens—clap it on when you need it—slip it off when you don't.

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There is certainty in picture-making with a Graflex. The user of the Graflex brushes aside the usual handicaps—he almost disregards subject, time, place or light.

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Graflex widens the possibilities of pictorial achievement.

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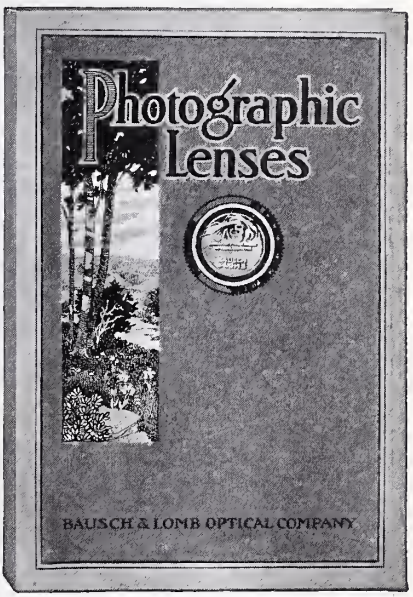

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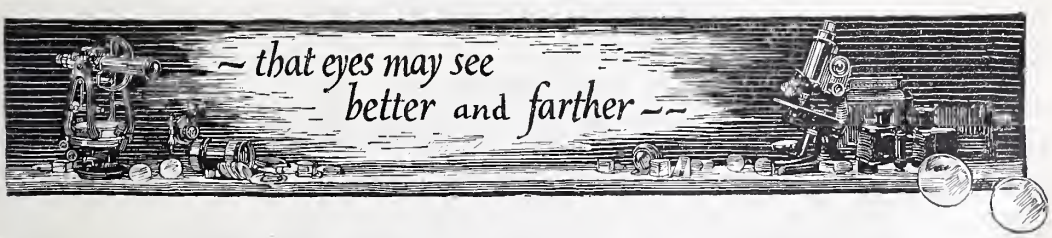

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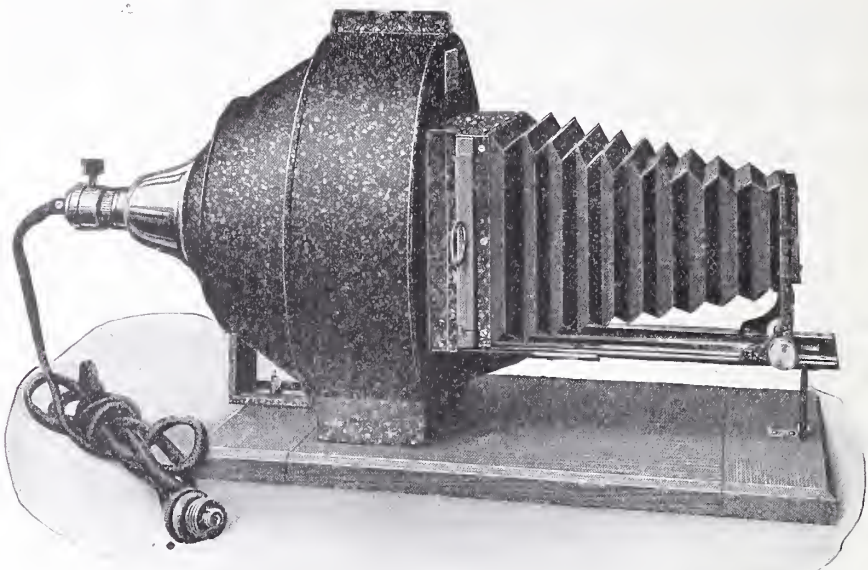

ENLARGER No. 1—$33.00

This outfit consists of sheet metal "house" with side door for the insertion of ground-glass diffusing screens; grooves for the glass; No. 3 Multiflex reflector attached to the box; opening in the box in front of grooves for the insertion of negative-holder; holder for 5 x 7 negatives, or for 5 x 7 kit to hold smaller negatives; bellows connecting with front supports carrying the lens-board track or bed with rack and pinion for focusing.

Any lens with which negatives have been made may be used on the lens-board of the enlarger for the production of enlargements of any size within the limits of the easel in use. We do not supply a lens with this outfit, but can quote price on request when informed as to customer's requirements.

Length from lens-board to lamp socket, 2 feet. Height, 13¼ inches. Width of lamp house, 3⅝ inches. Sizes of lens-board, 2¾ x 3⅛. Will accommodate lenses up to 2½ inches in diameter.

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This outfit is nearly as small as a Kodak itself and is the most compact and efficient enlarger made. It is designed for use in conjunction with your own Kodak and is supplied with adjustable clamps which can be set for any sized camera from vest pocket to 3¼ x 5½ inches. When not in use, all parts of the enlarger are placed in the lamp-house which acts as a container and reduces the size of the apparatus by nearly one-half.

The enlarger is supplied with a light-tight hood which adjusts itself to the size of the Kodak used and excludes absolutely all light except that which passes through the lens.

NOTE—Electric bulb is not included with these outfits owing to the great risk of breakage in shipping, and the fact that bulbs can be more easily procured in the home market.

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$ .75	$2.70	$5.15	$10.00

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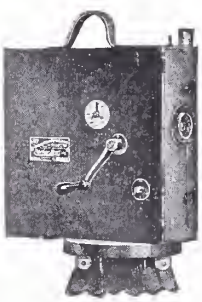

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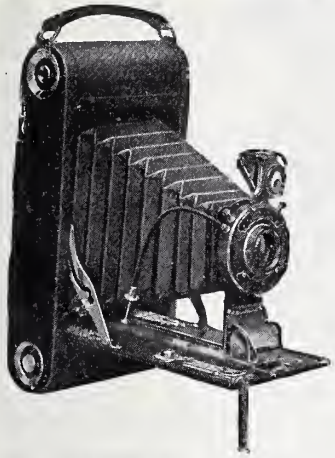

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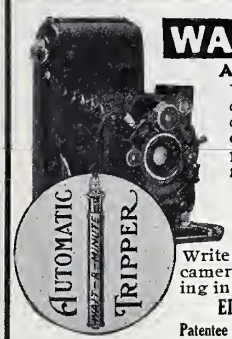

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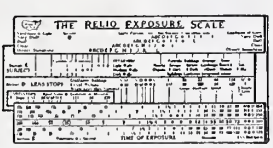

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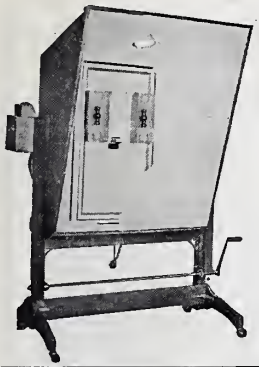

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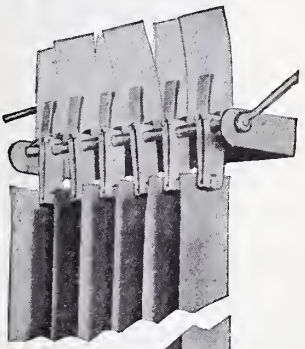

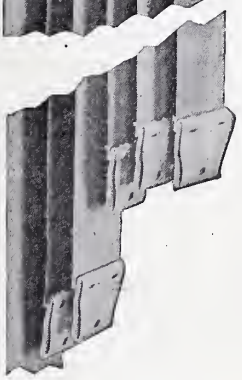

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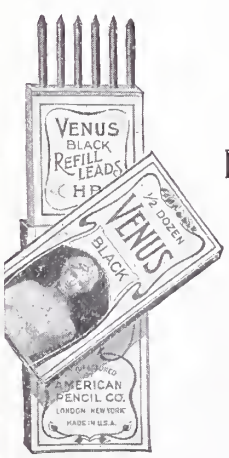

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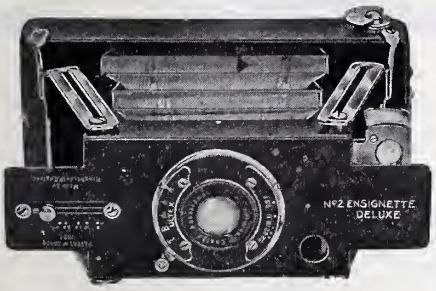

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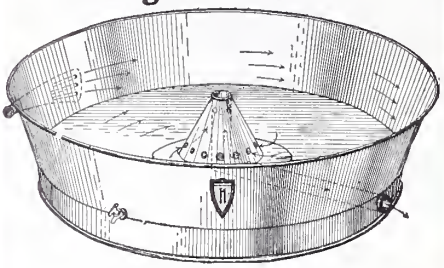

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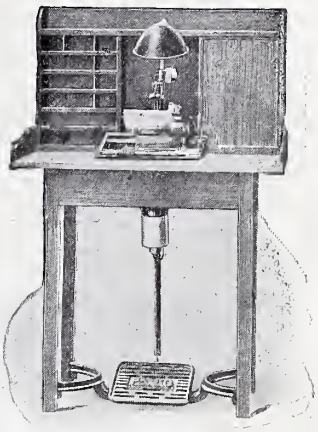

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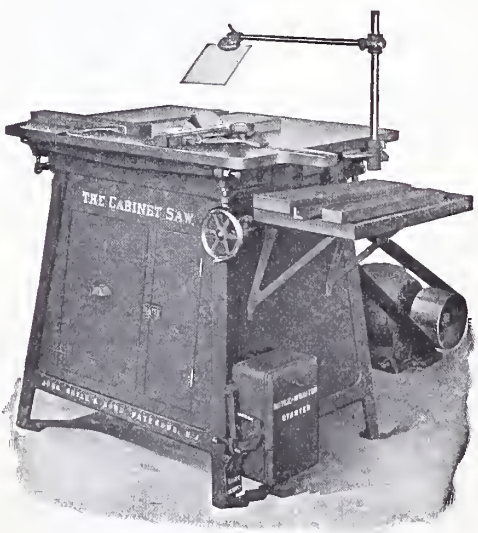

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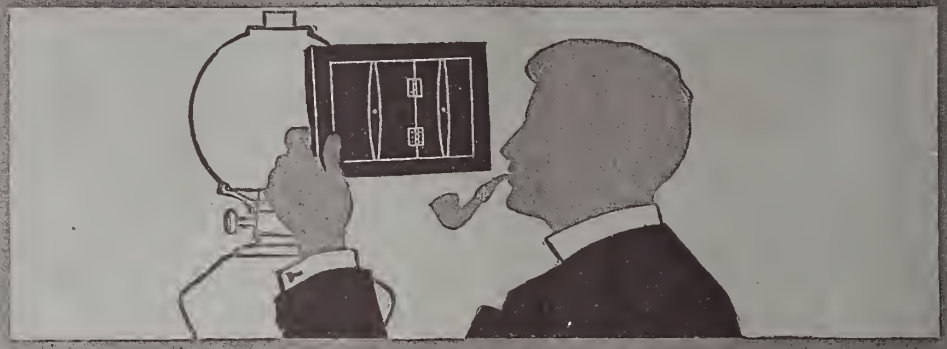

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